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INFERENCE IN THE VAIŚEṢIKASŪTRAS

INTRODUCTION

I propose to examine the doctrine of inference expounded in the *Vaiśeṣikasūtras*, with the purpose of trying to discover its possible origins. There seem to be definite strata within those sections of the *Sūtras* dealing with inference, and I think that many useful conclusions can be drawn about the antiquity of these passages relative to one another by making a critical comparison of them with a number of other early texts. The most important texts for confrontation with the *Sūtras*' position are the *Nyāyasūtras* and *Nyāyabhāṣya* and, especially, the *Ṣaṣṭitantra* of the Sāṃkhya master, Vṛṣagaṇa, as reconstructed by E. Frauwallner.[1]

The Sāṃkhya and Vaiśeṣika schools for centuries dominated Brahmanic philosophical speculation in ancient India,[2] during that age of vitality before the Vaiśeṣika suffered petrifaction through scholasticism and the Sāṃkhya expired quietly from old age.[3] Some of the internal inconsistencies apparent in the *Vaiśeṣikasūtras*' statements on inference and in the techniques actually employed to prove some of its doctrines can probably be explained by referring to the Sāṃkhya epistemology formulated by Vṛṣagaṇa.

The opening section of the *Ṣaṣṭitantra*, which contains all the essential points of Vṛṣagaṇa's theory of cognition, has been reconstructed by Frauwallner from Dignāga's critique of those doctrines in his *Pramāṇasamuccaya* and *Vṛtti* and Jinendrabuddhi's *Ṭīkā*; from Siṃhasūri's commentary, *Nyāyāgamānusāriṇī*, to the *Dvādaśāranayacakra* of Mallavādī; and from two earlier sources for the classical Sāṃkhya, the *Yuktidīpikā* and *Vyāsabhāṣya*. Siṃhasūri conveniently identifies the work he has quoted as the 'Vārṣagaṇa-tantra', which can only be, says Frauwallner, the *Ṣaṣṭitantra* of Vṛṣagaṇa. Frauwallner dates the work roughly at around 300 A.D.[4]

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PART I: VAIŚEṢIKASŪTRAS AND ṢAṢṬITANTRA COMPARED

A. *Vaiśeṣikasūtras*

To begin with, I wish to present what I understand to be the *Vaiśeṣikasūtras*' teaching on inference, in order to compare it with the *Ṣaṣṭitantra*. Inference is cognition of an entity by means of a mark: *laiṅgikam*.[5] Kaṇāda, traditionally called the author of the *Vaiśeṣikasūtras*, used the word '*liṅgam*' (mark) several times, for that which makes knowledge of something else possible.[6] The mark is, normally, something perceived, as horns, dewlap, etc., are the '*dṛṣṭam liṅgam*' (perceived mark) of the cow.[7] In some cases, the connection between the entities and their marks is not perceived – wind (*vāyu*), thus, has tangibility or touch (*sparśa*) as its '*adṛṣṭaliṅgam*' (unperceived mark)[8]. Under such circumstances, inference is thought by some to be still conceivable, 'from having seen from the general', *sāmānyato dṛṣṭāt*; Kaṇāda, however, rejects this possibility, because no *particular* entity can be inferred by this method, only something in general.[9] To demonstrate how Kaṇāda imagined inference by means of a mark to work, I summarize his proofs for three of the nine Vaiśeṣika substances, all three of which are themselves imperceptible: physical space (*ākāśa*), wind (*vāyu*) and soul (*ātman*).

First, physical space (*ākāśa*): sound (*śabda*), which is an attribute, is the mark of an intangible substance in which it inheres. It is perceptible. It is neither an attribute of soul (*ātman*) nor of mind (*manas*), but is the attribute and mark of physical space (*ākāśa*).[10] Here, sound (*śabda*) is regarded as a perceptible mark, although its connection with its imperceptible substrate is, naturally, never to be apprehended. Kaṇāda does not even mention the question of the perceptibility of that connection.

The case is somewhat different with wind (*vāyu*). First, *sūtras* II.1.8–10 contrast the perceived marks of the cow (horns, etc.) with the 'unperceived mark' of wind which is tangibility (*sparśa*). Tangibility is, nonetheless, the mark, perceptible as sound is, and following the model of the argument for sound and physical space, one would expect it to suffice as proof for wind. *Sūtras* II.1.15–17, however, find it not sufficient as a mark because it is impossible to observe its connection with what possesses it; therefore wind, the possessor of tangibility, has no perceived mark (*dṛṣṭam liṅgam*), and no particular possessor can be established by 'seeing from the general'. To compound the reader's amazement, no further attempt at an inference

of wind is even made, and the *Vaiśeṣikasūtras*, which are supposed to admit only two means of cognition, perception and inference, conclude that the only way to know that wind exists is from scripture.[11]

Soul (*ātman*) is a still more complicated matter.[12] First, some twelve 'marks of the soul' (*ātmaliṅgāni*) are listed – those manifested physically (inhaling, etc.), and some psychological states (pleasure, etc.). Then it is asserted that because no connection of these marks with their (imperceptible) possessor can be observed, no perceived mark is available; seeing from the general can produce no knowledge of any particular (possessor); scripture must again be resorted to. (*Sūtras* 6–8 are identical with II.1. 15–17, except that 'Yajñadatta' in III.1.6 replaces the 'vāyu' (wind) of II.1.15.) But here the Sūtra-writer is not satisfied to let the proof rest on scripture; *Sūtra* 9 immediately declares that it is not necessary to rely on scripture 'because of the restricted use of the word 'I' '. Candrānanda, author of a commentary on the *Vaiśeṣikasūtras*, elaborates: one can observe that 'Yajñadatta inhales', etc., but that this inhaling is connected with soul is not known by means of that simple observation, and therefore inhaling, etc., is not the perceived mark of soul. Inhaling as such does require an efficient cause (*nimitta*), pleasure requires a substrate; this is seen in general, but the particular identity of that agent or support cannot be known in this way: the substrate could just as well be physical space (*ākāśa*), for example. But the word 'I' can refer to *only* one thing, and to state "*I* possess inhaling, *I* possess pleasure" means inhaling, etc., is the mark of this 'I'. The only further problem is whether this 'I' is really to be equated with the soul; *Sūtras* 10–14 dismiss the possibility that it refers to the body, while 13 and 14 establish that the particular knowledge gained by the perception of the entity 'I' is not that of individual bodies, but of 'something quite different' (*arthāntara*) – which is the soul, the *ātman*.

Candrānanda thus argues that the twelve marks of the soul are indeed proper marks if one recognizes their peculiar application to 'I', that is, to the individual soul. The *Sūtras* do not say exactly that, but 13 finally argues that because the recognition of 'I' exists in one's own soul and nowhere else, there is 'perception' (*pratyakṣa*) of the something quite different. Self-consciousness is not called the mark of soul in the *Vaiśeṣikasūtras*, but it does function as that which produces knowledge of the soul.

To complete the arguments for physical space (*ākāśa*) and for soul

(*ātman*), the Sūtra-writer has used a rudimentary technique of elimination of all possibilities but one in order to establish the particular substance which is known: II.1.25 rejects soul and mind as substrate of the attribute sound and III.2.10–14 eliminate the body as subject of self-consciousness.

Kaṇāda does not rest upon the bald assertion that inference occurs by means of a mark. III.1.8 and IX.18 describe four ways in which the mark can be related to its possessor in order to effect a valid inference: it can be a conjunct of what is marked, can inhere in it, can co-inhere with it in something else, or can be contrary to it.[13] 'This is of this' (IX.18) indicates the relation of mark (*liṅga*) to possessor of the mark (*liṅgin*).[14] The relation of 'co-inherence' is one of effect as mark of another effect, or cause as mark of another cause according to Candrānanda. The 'contrary' operates as a mark in four ways: the non-existent is the mark of something existent which is contrary to it, the existent is the mark of something non-existent, and contrary, a non-existent is mark of another (contrary) non-existent, or an existent is mark of another (contrary) existent.[15] In his proofs for the three substances discussed above, the Sūtra-writer relies on the relation of inherence to establish that sound is the valid mark of physical space (II.1.25); since touch is an attribute and wind a substance, according to Vaiśeṣika tenets, their relation is also one of inherence; and of the marks of the soul at least pleasure, pain, desire, aversion and volition are attributes and thus should be connected with their substrate in a relation of inherence.[16] As for the relation of self-consciousness to the soul, which is the Sūtra-writer's chosen cause of knowledge of that substance, it could be neither co-inherence nor contrariety. Conjunction in the manner of smoke-fire would be possible, but since the *Vaiśeṣikasūtras* show a strong prediliction for the cause-effect relation (which includes inherence) I would expect that to be the Sūtra-writer's intended relationship if he really meant to harmonize his proof for soul with the theory of the four relations. Furthermore, it may be that consciousness of 'I'-ness is here thought of as a form of *buddhi* (intelligence or, cognition), which was admitted as an attribute in I.1.5, and is here neglected as an attribute of soul.[17]

Sūtras III.1.9–11[18] seem to explain why these relations can be known to function consistently, thus making it possible to infer one conjunct, etc., from the knowledge of its partner: 'Because there is previous establishment of the valid mark' (*apadeśa*), and 'no establishment of the invalid mark'. Candrānanda interprets this to mean that the conjunct, etc., has

been previously known as related to what is joined to it, and because of this knowledge which is (evidently) empirically gained, the known conjunct can be a valid mark for the other.[19]

The three proofs discussed earlier were of entities which are themselves imperceptible. Inference is a means of knowing something not present to the senses, and the ninth book of the *Vaiśeṣikasūtras* treats the currently 'non-existent', *asat*, as object of knowledge. In III.1.8 Kaṇāda has already declared that the non-existent (*abhūtam*) can be known by means of a mark which is itself either existent or non-existent, but in any case contrary (*virodhi*) to what is to be established. What does exist did not exist in the past, or it can cease to exist in the future; what does not exist has existed previously, or can come into existence later, or it can be absolutely non-existent; correct knowledge concerning these non-existents is possible.[20] "There is knowledge of the (presently) non-existent (as non-existent) because its existence is not perceived, its existence is remembered, and its contrary (*virodhi*) is perceptible."[21] This sutra constitutes yet another definition of inferential knowledge – specifically by means of a 'contrary' as mark – and presents yet more clearly than any other *sūtra* in the text the essential features of valid inference as taught in many other works – beginning with the *Ṣaṣṭitantra*: a relation is known to exist between something not present before the senses and its contrary; the contrary is perceived, and what is known to be connected with it is recalled, which results in knowledge of that unseen entity.[22]

Thus, according to the *Vaiśeṣikasūtras*, not only the absolutely imperceptible, such as soul, but also the presently non-existent and the presently unperceived can be known by means of inference.

B. *The Ṣaṣṭitantra*

The *Ṣaṣṭitantra*, which was far more rationally organized than the *Vaiśeṣikasūtras*, clearly defines inference as primary means of cognition and defines also the relations underlying it; explains how doubt is to be avoided in the process of cognizing; briefly mentions the two other means of knowledge (*pramāṇas*) accepted by it, perception and reliable authority (*pratyakṣa* and *āptavacana*); and then returns to inference to explain in some detail how the two-fold inference operates. After that, Vṛṣagaṇa offers a series of proofs for the fundamental principles of the Sāṃkhya system, which are meant to demonstrate the nature of a valid proof.

"Inference is the establishment of the remainder by means of perception on the basis of a particular connection."[23] Seven kinds of connections can be used to establish the invisible remainder by means of the visible connected with it: (1) the relation of master to property (*nor daṅ bdag po'i dṅos pos*: *svasvāmibhāvaḥ*), as king to servant or soul to primeval matter (*puruṣa* to *pradhāna*);[24] (2) matter to its altered condition (*raṅ bźin daṅ rnam 'gyur gyi dṅos pos*: *prakṛtivikārabhāvaḥ*), as milk to sour milk, or primeval matter to the 'great one', (=intelligence, etc.; *pradhāna* to *mahadādi*); (3) cause to effect (*'bras bu daṅ rgyu'i dṅos pos*: *kāryakāraṇabhāvaḥ*), as a cart to its parts, or the good, etc. (*sattvādi*); (4) efficient cause to the caused (*rgyu mtshan daṅ rgyu mtshan can gyi dṅos pos*: *nimittanaimittikabhāvaḥ*), as potter to pot, or soul (*puruṣa*) to the activity of primeval matter (*pradhāna*); (5) matter to form (*tsam po daṅ tsam po can gyi dṅos pos*: *mātrāmātrikabhāvaḥ*), as branch etc. to the tree, or sound etc. to the great elements; (6) concurrent occurrence (*lhan cig spyod pa'i dṅos pos*: *sahacāribhāvaḥ*), as with Cakravāka ducks, or with the good, etc. (*sattvādi*); (7) hindering to hindered (*gnod bya gnod byed kyi dṅos pos*: *vadhyaghātakabhāvaḥ*), as snake to mongoose, or the good, etc. (*sattvādi*) insofar as they comprise the reciprocal relation of the essential and the accessory matter (*aṅgāṅgibhūtaḥ*).

When one member of such a pair is perceived, after having been once perceived connected with the other member, the one which was so connected but is not now perceived is cognized as present – but not in a particularized form (as, from smoke fire is known, but not a particular fire). In order to resolve doubt about the particular entity which is thus cognized, a particularity must be observed concerning it; as when one perceives in poor light part of a cow-sized animal in a cow or horse enclosure, one may at first hesitate to identify the creature, until further perception of some particularizing quality makes possible the certain knowledge that the animal is a cow.[25] The meaning, here, is that if the particular quality perceived (the mark) is specific enough, indubitable knowledge of the unseen part must result.

Thus, Vṛṣagaṇa's conception of valid inference entails the following essentail points: two entities are known from experience to be connected; one member only is perceived; the perceived member is carefully observed in its particularity, and the unseen member is correctly cognized.

Inference can, however, be subdivided into two forms, according to whether the object known is one very specific object, or whether it is one of a certain class of objects. The first is *viśeṣato-dṛṣṭa* inference (*bye brag mt'oṅ ba*), 'seen from the particular'; as, when one has seen one particular fire and smoke connected, and seeing again the same smoke, is able to recognize the very same fire as present. The second kind of inference is *sāmānyato dṛṣṭa* (*spyi mt'oṅ ba*), 'seen from the general'; as, when one has seen fire and smoke connected, later sees some smoke and concludes that *a* fire – fire-in-general – is there.[26] *Sāmānyato dṛṣṭa* is also of two kinds, inference of that which has something prior to it, (*pūrvavat, sṅa ma daṅ ldan pa*), and inference of that which has something following it (*śeṣavat, lhag ma daṅ ldan pa*), of which *pūrvavat* is seeing a cause fully and completely and from this inferring the immanent commencement of its effect – as, concluding that it is about to rain when one has just perceived the gathering of clouds. *Śeṣavat* is observing an effect and knowing that its cause has been present – as, from the perception of a newly swollen river, one infers that rainclouds had appeared. *Pūrvavat*, inference from cause to effect, is faulty, but *śeṣavat* is reliable when it is carefully pondered (i.e., when the mark is attentively observed).

Sāmānyato dṛṣṭa, then, in the form of *śeṣavat*, is, for Vṛṣagaṇa, the archetype of a valid inference of something which has not been perceived, including entities which are absolutely supersensible. *Śeṣavat* inference can be formulated in two ways – directly (*vīta*), or following consistently from its own form; and indirectly (*āvīta*), or following inevitably because it is the only remaining possibility. Direct proof (*vītasiddhi*) is the proof in the form of a five-membered syllogism. Indirect proof (*āvītasiddhi*) is proving one's own contention by refuting the opponent's thesis, using an argument such as "*X* is possible in no other way but through *Y*. *X* does however definitely occur. Therefore, because *Y* is the only remaining possibility, it is known to be the occasion for the occurrence of *X*." It is the rule, says Vṛṣagaṇa, that the direct proofs should always be presented first, followed by the indirect.

Direct and indirect proofs are, then, the approved method of communicating one's own knowledge to another, and are to be used in a debate. Vṛṣagaṇa shows an evident preference for the direct proof which is self-sufficient, while the indirect seems to be reserved for a sort of 'mopping-up' operation.[27]

C. *Some Thoughts on the Significance of the Ṣaṣṭitantra and a Comparison of it with the Vaiśeṣikasūtras*

As Frauwallner's reconstruction of Vṛṣagaṇa's doctrine of inference suggests, the Sāṃkhya master's contributions to the development of Indian philosophical thought were considerable. His teaching on epistemology is comprehensive and he actually grounds the whole Sāṃkhya system firmly upon it, which is in sharp contrast to the practice of most early thinkers, Kaṇāda for example, whose work one must sift carefully to discover what sort of concept of valid reasoning underlay his actual efforts to establish fundamental tenets. The *Ṣaṣṭitantra*, or what remains of it, is an eminently rational work, lucidly ordered. The outstanding accomplishment of Vṛṣagaṇa was certainly his two-fold classification of inference – because of his purpose in distinguishing the two: he was attempting to construct a method of reasoning which would prevail over the usual, simple appeal to analogy and free use of examples,[28] and which would ensure the validity of inference. In order to do this, he made the firm connection between two entities the foundation of inference and formulated a a theory of how to determine a genuine connection. The inference from 'seeing from the particular' (*viśeṣato dṛṣṭa*) is, so to speak, a model for inference based on an unquestionable, empirically known connection between two entities: just those two have been actually perceived together, and when later only one is seen– the one which is dependent on the other for its existence – precisely that unseen entity can be inferred without benefit of further perception. Since such a relation is known to exist in particular cases, it is legitimate to conclude that this sort of relation is generally valid, so that when one member of such a connected pair is perceived the other may indeed be known, although neither of these two *individual* entities has ever been experienced before. This is what it means to 'see from the general', and it is by means of this discovery that Vṛṣagaṇa is able to impute general validity to his kind of inference. Inference from 'seeing from the general' (*sāmānyato dṛṣṭa*) is a rational generalization, then, after the model of a particular demonstrated case. Even so, it cannot apply unless the observed member of a connected pair is accurately perceived; hasty or indistinct observation of it can lead only to doubt or error.[29]

Vṛṣagaṇa's Sāṃkhya, with its rationalizing bent, had particular need

of a logical technique which would prove irrefutably the truth of the major tenets of the system – especially those concerning *puruṣa* (soul) and *pradhāna* (primeval matter) – which were held to be absolutely beyond perception. The *Ṣaṣṭitantra*'s two-fold inference rests upon empirical knowledge, but because of the careful establishment of rules for the generalization of inference as means of knowing, it is meant to be capable of extension to cover cognition of the supersensible.

Both the *Ṣaṣṭitantra* and the *Vaiśeṣikasūtras* build their notions of inference on the firm foundation of established relationships between entities. The *Ṣaṣṭitantra* does so reasonably, even 'scientifically', with great internal consistency. The *Vaiśeṣikasūtras* seem to attempt to follow the same pattern, but ambiguity substitutes for clarity and self-consistency. Not only the discrepancies among the three proofs cited for physical space, wind and soul reveal different levels of thinking about inference, but also the uncertain depiction of the kinship of the concept of concomitance with the knowledge of something unseen (currently or absolutely). The idea of previous empirical establishment of the valid mark can, I think, be traced (*Sūtras* III.1.9–11), but Kaṇāda betrays an obvious prejudice in favor of direct perception when he argues that 'seeing from the general' is unsatisfactory because the connection of the mark with what is to be proved is in such a case inherently imperceptible. Kaṇāda, in other words, hesitates before the crucial step of establishing a general theory of inference grounded upon known relations.

The four *Vaiśeṣikasūtra* relations are, however, to be distinguished from connections which are ephemeral and which can apply only to a particular instance, for example concepts of something nearby and something distant, which are relevant only to direct experience in a particular time and place. No generalization from such connections is possible, for, says Candrānanda, the nearby and the remote do not stand in a relationship of cause and effect to one another, nor are they joined in a state of qualifying and qualified.[30] It is apparent, therefore, that Kaṇāda was at least proceeding toward the concept of generalized concomitance, and did not intend to offer merely an arbitrary register of connections in *Sūtras* III.1.8 and IX.18.

The relations actually mentioned in the two texts are an inventory of some 'real relations'; that is, the concept of relationship itself is not generalized, as it was later by Dignāga, Praśastapāda, and their successors.

Both catalogues lean heavily, however, toward a basic relationship of cause and effect. The Vaiśeṣika inherence is interchangeable with material causation, co-inherence considers the relation of causes to causes and effects to effects insofar as each pair co-exists in a single inherent cause, and the four pairs of contraries mentioned by Candrānanda seem to be causally related.[31] Only *saṃyoga* is apparently conceived non-causally; fire and smoke are specifically excluded from the relationship of inherent causation by Candrāṇanda.

Of the seven *Ṣaṣṭitantra* connections, the relation (No.2) of matter to its altered condition is a statement of the Sāṃkhya evolution theory, which means it is the relationship of ultimate material causation. The relation explicitly called cause-effect (No.3) seems similar to the Vaiśeṣika doctrine of inherent causation, since the example given is a relation of parts to whole. No. 4 is also a causal relation, of agent to instrument. Therefore at least three of the seven connections are definitely causal. Moreover, *pūrvavat*, 'inference of that which has something prior to it', and *śeṣavat*, 'inference of that which has something following it', are defined as causal relations. Why the text should have limited itself to a definition of the two kinds of 'seeing from the general' inference as based on a causal relation only is obscure. *Śeṣavat* must be able to establish the unseen half of any of the seven connections; connection No. 1, master to property, is especially critical since it covers the relation of soul (*puruṣa*) to primeval matter (*pradhāna*).[32] I would say that, if anything, both the *Ṣaṣṭitantra* and the *Vaiśeṣikasūtras* were tending toward a theory of concomitance resting on causation. When constructing actual proofs for its doctrines, the *Vaiśeṣikasūtras* usually resort to the basic causal relation. Frauwallner does not reproduce the *Ṣaṣṭitantra*'s own proofs for the existence of *pradhāna*, etc., so I can make no further surmises at the moment for that work.[33]

The *Ṣaṣṭitantra* appears, nonetheless, to act with conviction on its principle that established connections lie at the base of all valid inferences, even though it has not been quite able to recognize the value of a comprehensive theory of invariable concomitance which would apply to any number of 'real' relations. Vṛṣagaṇa had enough confidence in his own insight that any inference must be based on known connections to extend the value of those connections to the realm of the unseen, using the technical device of 'seeing from the general' to establish the unseen truth.

Kaṇāda clearly mistrusted that technique, mentioning it twice only to reject it both times (*VS*.II.1.15–7, III.2.6–8). Yet the relation of contraries which he admits, confronts him again with the very problem of cognizing the unseen in the form of the presently non-existent.[34] As long as he could agree that an imperceptible entity can exist and can be known, I find it difficult to imagine how he could dismiss a tool so useful as Vṛṣagaṇa's 'seeing from the general'. Taking refuge in scripture could hardly be permanently acceptable to a Vaiśeṣika (II.1.17), and such an ingenious argument as that invented for the proof of soul by recognition of self-consciousness becomes in the end an argument to the point of elimination of all possibilities but one – that the concept 'I' can have reference only to the soul. And that is in fact Vṛṣagaṇa's 'seeing from the general' inference in the form of inference of that which has something following it (*śeṣavat*), expressed as an indirect (*āvīta*) proof. If Kaṇāda would use such a device in this place, then why should he deny its validity just above by insisting that 'seeing from the general' can produce no knowledge of the particular. I do not notice any effort by Kaṇāda, either, to harmonize this proof for soul with his own teaching of the four relations. That argument seems to me clearly an interpolation, quite inconsistent with major portions of the rest of the text. Candrānanda, on the other hand, exerts himself to unite the proof of soul from the 'restricted use of the word 'I' ' with the concept of inherence (and of efficient causation) by explaining that pleasure, etc., is a genuine mark of the soul *because* one can use it meaningfully only in the context '*I* have pleasure', and 'I' can refer only to the soul. In his comment to IX.8, furthermore, he finally admits that 'seeing from the general' is how one is able to know something non-existent (*asat*).[35]

The *Sūtras* themselves betray in still another place their equivocal attitude – or rather their different time strata – with respect to inference 'from the general', for IX.6 (see above) is the statement which stands nearest, in the entire text, to Vṛṣagaṇa's definition of inference – and the object of knowledge in this case is just the presently non-existent.

I think that those who wrote the Vaiśeṣikasūtras – all of those thinkers – failed to fully understand the implication of the Ṣaṣṭitantra 'seeing from the general' inference, and why it could be thought valid even when applied to something completely outside the realm of perceptibility. These early Vaiśeṣikas remained sceptical, it seems, of whether something not

seen could really be known. The Vaiśeṣikasūtras' definition of doubt (II.2.19) testifies again to this scepticism: doubt arises from *seeing a generality* while not seeing something particular, and meanwhile remembering a particular.[36] Vṛṣagaṇa also recognized the possibility that doubt might be produced from seeing something vaguely and therefore insisted that the entity serving as the mark be carefully and accurately observed so that there could be no mistake about knowing what was really related to it. But he made no thorough analysis of how to do that. This is probably the weakest point of the *Ṣaṣṭitantra* theory of knowing inferentially, and the Vaiśeṣikas did point it out. Still, although Vṛṣagaṇa did not have much to say about how one could be sure that a mark is valid, the *Vaiśeṣikasūtras* give the problem no attention whatever: the weakness in the Sāṃkhya position was discovered, but the Sūtra-writers did not know how to correct it. This failure to develop any workable means of ensuring the reliability of a mark is, I believe, the cause of the *Vaiśeṣikasūtras*' general uneasiness about unseen things. *VS*.III.1.9 does assert that the 'valid argument' (mark) must be previously established, but there is no admonition to inspect it carefully before using it as the ground for an inference. Vṛṣagaṇa had apparently convinced himself that he could discern a reliable inferential mark; the authors of the *Vaiśeṣikasūtras* were not quite able to find solace in any such comforting conviction.

It seems quite clear to me that there is an intimate relation between the theories of inference in the *Vaiśeṣikasūtras* and the *Ṣaṣṭitantra*, and it looks very much as though much of what the *Vaiśeṣikasūtras* discuss was borrowed directly from the *Ṣaṣṭitantra*. This was no whole-hearted adoption of a new theory, however, but rather a very critical evaluation of a rival school's rousing discovery which was spurring the minds of whole generations of thinkers in ancient India.

PART II: VAIŚEṢIKASŪTRAS AND NYĀYA TEXTS COMPARED

A. *Nyāyasūtras*

There are inconsistencies, ambiguities, even contradictions in those portions of the *Vaiśeṣikasūtras* related to inference. I shall attempt to show that some of these problems can be better illuminated by comparing the appropriate passages with the earliest Nyāya texts, the *Nyāyasūtras* and the *Nyāyabhāṣya*.[37]

Inference in the *Vaiśeṣikasūtras* is markedly different from the brief characterization of it in the *Nyāyasūtras*. There are some self-evident parallels on specific points. like the mention of the six characteristics which are the mark (*liṅga*) of the soul in *NS*.I.1.10.[38] But Gautama's actual definition of inference, in *NS*.I.1.5, is enigmatic and has been much debated:[39] "inference is preceded by that (perception, *pratyakṣa*, of *Sūtra* 4), and is three-fold: *pūrvavat*, *śeṣavat* and *sāmānyatodṛṣṭa*."[39a] In *NS*.II.1.38, an opponent's objections to Gautama's *pūrvavat*, etc., are given, with the *Nyāya* refutation following directly in *Sūtra* 39.[40] The objections are that 'obstruction, demolition and similarity' have produced only fallacious reasoning, and that (Gautama's inference) is no means of knowledge (*pramāṇa*): that is, the wrong reasons have been given as ground for inference in the three cases. And Gautama replies: "Not so; because (what are the real *hetus* in the three inferences cited) are entirely different from – (a) such (rise of water) as is restricted to one place, (b) such (running about of ants with their eggs) as is due to fright, and (c) (such peacock's scream) as is a mere resemblance of it."[41] The *Nyāyabhāṣya* on *Sūtras* 38 and 39 explains the three examples cited: the first case is to be an inference that there has been rain up the river from observing the fullness of the river (as well as its swift current and the debris it carries); the second is to be an inference that rain will come from observing the calm and orderly running about of ants with their eggs from the nest (and the absence of any sign of fear); and the third is an inference of the presence of the peacock from its scream (which cannot be confused by a knowledgeable listener with that of an imitator).[42] There seems to be no problem here at all – except that in his comment to *NS*.I.1.5 Vātsyāyana has defined *pūrvavat* as inference of the effect from the cause, *śeṣavat* as inference of the cause from the effect, and *sāmānyatodṛṣṭa* as some sort of inference of one situation from an analogous one (the movement of the sun is deduced from its change of position by analogy with the fact that a person is seen to move and this results in his proceeding to another place).[43] But the examples of *NS*.II.1.38–9 do not fit Vātsyāyana's explanation; for, the first case, inference of past rain from present fullness of the river, which should be a *pūrvavat* inference if it is in agreement with the word order of *NS*.I.1.5, is no inference *from* cause *to* effect, but rather vice versa. The second case, *śeṣavat*, is also reversed, and the example of the peacock's scream for *sāmānyatodṛṣṭa* gives knowledge of the unseen

presence of the peacock now. Did Gautama intend *pūrvavat* and *śeṣavat* to represent, primarily, any sort of inference of cause or effect? I think not.[44] *Pūrvavat*, judging from II.1.38–9, is knowledge from the present to the past; the case cited by Gautama and by his critic *happens* to be one of knowledge of the past cause from the present effect. *Śeṣavat* should be inference from the present to the future, and here Gautama's example has nothing to do with causation – for the ants' activity does not cause rain. (However, here the opponent's objection would alter the situation: one sees the running about of ants, and ought to know that this is the result of demolition of their nest: that is, knowing the *past cause* from the *present effect.*) *Sāmānyato-dṛṣṭa*, 'seeing from the general', here, is knowledge, occasioned by other than visual perception, of something presently existing but not seen: knowledge in present time. The peacock example happens, also, to deal with a kind of causal relation; but inference in this instance would proceed also from effect to cause, and would be thus indistinguishable from *pūrvavat* and not a third kind of inference (*anumāna*) at all.[45]

A comparison with some other very early texts lends further support to this interpretation of Gautama's intention. The *Carakasaṃhitā* (*ca.* 100 A.D.) explains that one can infer in three ways, relative to present, past and future, when perception has preceded the inference: a hidden fire is inferred from smoke (=present to present), past sexual union from the presence of the offspring (=present to past), and future fruit from seeing the seed when one already knows that fruit proceeds from a seed (=present to future).[46] The three kinds of inference are not named, but they do seem clearly parallel to *NS*.I.1.5; and the definition of the *Carakasaṃhitā* does begin the same way – one can infer in three ways, and this reasoning is preceded by perception. Aśvaghoṣa in his *Saundarananda* (*ca.* 100 A.D.) offers no speculation on the process of inference, but does demonstrate a common sense mode of reasoning which focuses on knowing in past, present and future and which was evidently felt to produce reliable knowledge; Canto XVI, verses 14–16, says: "And seeing the suffering of birth present before your eyes, knowing that there has been similar suffering in the past; and as suffering has been and is, understand that there will be similarly suffering in the future. / For as the nature of the seed is known by present experience in this world, it is to be inferred that its nature was the same in the past and will be the same in the future.

And as a fire in our own presence is perceived to be hot, so also it has (always) been hot and will (always) be hot. / For where, O man of noble conduct, there is development of corporeality according to its qualities, there also is suffering; for apart from it suffering has not been and will not be nor can it be."[47] Verse 14 explicitly states that seeing something in the present, and knowing that such a thing has existed in the past, one can know that a similar thing shall exist in the future. Verse 15 contends that from present experience of an entity, it can be inferred that its nature was the same in the past and shall be so in the future. Verse 16 adds that when one knows the connection between two entities (corporeality and suffering), and sees one in the present, one knows that the other exists; if the one (corporeality) is not, the other is not, has not been, shall not be, and is moreover absolutely incapable of existence. The basic ideas of the *Nyāyasūtras* and *Carakasaṃhitā* are, thus, present here, also: there is perception of something in the present, which allows inference of something (connected with it) in any of the three points of time. In the *Carakasaṃhitā* and especially in *Aśvaghoṣa*'s poem an important point is added: the idea of a known connection between two entities.[48] The *Nyāyasūtras* do not emphasize this point.[49]

The *Nyāyasūtras*, then, I believe, do not reflect an understanding of inference as referring essentially to causal relations, but rather to knowledge of something which is at the moment imperceptible because it no longer exists or does not yet exist or simply because it is not now present before (all) the senses. Obviously causal relations can be known by any one of the three kinds of inference, but Gautama shows no awareness of the necessity to postulate why one entity can be used as the reason for inferring something known empirically as related to it. Gautama remains satisfied with empirical observation, and seems to assume that any pair of entities of situations formerly observed in some sort of mutual relation will be so related again. He does lay one condition on inference in any point of time, however, and that is careful observation of the ground or reason for making the inference (= the mark). The argument of the opponent in II.1.38 is that the same mark can lead to correct or erroneous conclusions depending on how one looks at it, and Gautama's rejoinder is in effect that accurate perception of the mark results in accurate knowledge of what is to be established. Vātsyāyana states explicitly what Gautama has implied: that the mark must be perceived in its particular,

qualified form before true inference can be effected, as, for example, the perception of a swollen river is an unqualified mark, but when one also notices that the current is rapid and debris is borne upon it then one can correctly infer that there has been rain up river and no dam or causeway lies just down river.

The reason (*hetu*) itself is a member of the Naiyāyika five membered syllogism, and it is "that which establishes what is to be proved", because of its similarity with the example or because of its difference from it.[50] Thus it must be attentively regarded, so that the argument can successfully defeat the opponent. Proof within the confines of the *Nyāyasūtras*' syllogism is much like reasoning by analogy with an example; the relevance of invariable concomitance between the reason for knowing, or the mark (*hetu*) and what is to be proved (*sādhya*) was not yet recognized, and all the emphasis was placed on the indisputable resemblance or non-resemblance of the mark (*hetu*) to the analogous example (*udāharaṇa*).

Vātsyāyana, at the end of his long comment on *NS*.I.1.5, finally, admits that inference occurs in the three points of time, because it has as its object both the existent (*sat*) and the non-existent (*asat*). The non-existent is what is past or has not yet occurred, and the existent *is*, now.[51] The non-existent, *asat*, as object of knowledge is the subject of *VS*.IX.1–12, as already mentioned, and this includes what is non-existent because it is past, has not yet occurred, or has never, and shall never exist. *Bhūta* (existing entity) and *abhūta* (not-existing entity) are both mark and object of inference grounded on the relationship of contraries (*virodhi* relation) in *VS*.III.1.8; but there, there is no precise reference to knowledge in three times. It is possible that the thought of Book IX and that of X.5–18, which also covers knowledge of cause and effect from present to past and future, is what lay at the foundation of the Vaiśeṣika-Sūtra-writer's conception of the contrary (*virodhi*) as one of the four kinds of fixed relations recognized by him as valid for inference. By the time the *Vaiśeṣikasūtras* were compiled and their recension reasonably settled upon, the problems of the non-existent and of knowing in the three points of time must still have been thought interesting though no longer so urgent as, say, in the period when the *Carakasaṃhitā* was composed. When the Vaiśeṣika connections (*sambandhāḥ*) were formulated, it was not imagined necessary to explain that they all had reference to all points of time. But the fact that contrary (*virodhi*) is expressly understood in terms of the

cognizable relation of the existent to the non-existent, etc., seems to me to betray its ancestry in reflection similar to that of the *Nyāyasūtras*. Why should it be conceived in just that way otherwise?

The Mādhyamika school (a Mahāyāna Buddhist school) challenged the possibility of knowing in the three points of time, and both Nāgārjuna and Āryadeva disputed with the Naiyāyikas (referring to them as 'Vaiśeṣikas').[52] The *Nyāyasūtras* and *Bhāṣya* reproduce part of this quarrel in II.1.8–19 and II.1.40–4; their conclusion is of course that past, present and future – and knowledge of them – are real.[53] (Naturally, it is no coincidence that *NS*.II.1.38–9 on inference in the three times appear in the midst of this dispute.) Nāgārjuna gives the Nyāya position in the *Vigrahavyāvartanī*, verses 70–1 and commentary: inference, and refutation, based on the three times of the reason is proved, because we see the cause in preceding time, in posterior time, and also the cause co-existent with its effect.[54] Nāgārjuna and Āryadeva negated the reality of the concept of time as past, present and future, by arguing that these three can exist only relative to one another and that, therefore, present and future must exist in the past since they are dependent upon it; or the three are indistinguishable, which is impossible; or if present and future do not exist in past time, relative to what are they present and future?[55]

Perhaps the remorseless attack of the Mādhyamikas who trained their heavy guns directly on the very concept of time and knowing gave impetus to feverish search by other schools for a new way to describe reasoning. Perhaps it was an occasion for Vṛṣagaṇa's own effort, for he probably lived after Āryadeva and he does not concern himself with inference simply as knowledge in any of the three points of time. The Naiyāyikas fought valiantly to uphold their viewpoint, but were rapidly overtaken and outmoded by thinkers who no longer were able to conceive of inference as simply knowledge of a thing separated from our perception by remoteness in time.

B. *The Nyāyabhāṣya and the Sāṃkhya School*

The *Nyāyabhāṣya*, as mentioned, does not follow the *Nyāyasūtras*' archaic and naïve doctrine of inference as knowledge in the three points of time. Vātsyāyana does teach three-fold inference, in accordance with Gautama, but it is not the same three-fold inference. He begins with a definition of inference in general, inspired by the *Sūtra*'s '*tatpūrvakam*': one has pre-

viously seen the connection of the mark (*liṅga*) and the possessor of the mark (*liṅgin*), sees the mark once again and remembers having experienced that connection; that results in the inference of the thing (*liṅgin*) which is not perceived.[56] Here I immediately recall the definition of the *Ṣaṣṭitantra*: inference is proof of the remainder by means of the visible because of a particular connection;[57] and I find that the fundamental notions of Vṛṣagaṇa are reproduced by Vātsyāyana: a connection between two entities is known, and therefore seeing one of these produces knowledge of the other which remains unseen. I think it is unmistakeable that Vātsyāyana has adopted the teaching of the *Ṣaṣṭitantra*, and, moreover, the Sāṃkhya influence does not stop at this point.

Vātsyāyana gives two complete descriptions of the three kinds of inference, most of which can be traced, I believe, to the *Ṣaṣṭitantra*. First to briefly recapitulate what has been summarized above, '*pūrvavat*' is, says the *Nyāyabhāṣya* on *NS*.I.1.5, inference of the effect from the cause and '*śeṣavat*' is inference of the cause from the effect. This is exactly the way Vṛṣagaṇa has understood those two words also: *pūrvavat* is '*that which* has (something) prior', which would be the *effect*, and *śeṣavat* is '*that which* has (something) later or following', which would be the *cause*. Gautama, of course, had understood *pūrvavat* simply as 'that which has (something) *prior*' in the sense of *past time*, and *śeṣavat* as 'having (something) *later*' in the sense of *future time*. For his first case of *sāmānyato-dṛṣṭa*, 'seeing from the general', Vātsyāyana gives no definition, only an example: the sun's movement is known from remarking its change of position, as in the similar case of a man who moves. This is a simple drawing of an analogy, and there is no question of any conclusively established connection existing between 'body such as the sun', for example, and 'movement'. There is no parallel for this in the *Ṣaṣṭitantra*, but the *Yuktidīpikā* gives the same example for '*sāmānyatodṛṣṭa*' and defines the principles supporting it as, when at some time one has observed the necessary connection of two entities (*dharmas*) and later observes one such entity it is possible to know another entity (necessarily connected with it) which is absolutely unperceived.[58] This probably reflects an anxious desire to explain within the context of the three-fold inference (without *viśeṣato-dṛṣṭa*, 'seeing from the particular') how one can extend inference grounded on connections to the supersensible; without exposition of a theory of connections this is difficult to do. I can see no reason,

therefore, despite this effort to generalize on the basis of a necessary connection, to regard this sort of '*sāmānyato-dṛṣṭa*' inference as anything more than a (rather primitive) example of reasoning by analogy.

Vātsyāyana then presents a complete set of alternative definitions for the three kinds of inference. '*Pūrvavat*' is seeing either of two entities previously perceived (together) and inferring the unseen member of the pair, as the inference of fire from perception of smoke. This is, once again, essentially the Vārṣagaṇa definition of inference in general, and could cover, by means of the definition given and also the example, both 'seeing from the particular' (*viśeṣato-dṛṣṭa*) and 'seeing from the general' (*sāmānyato-dṛṣṭa*) of the *Ṣaṣṭitantra*, because of the failure to distinguish between inference of the same fire which has been seen and inference of fire in general. Here, '*pūrvavat*' is understood by Vātsyāyana as 'as previously (known)'. *Śeṣavat* is alternatively defined as the remainder, *pariśeṣa*, which means it is a tool for the elimination of all possible explanations but one, as: sound is a quality, because it exists and is non-eternal, is neither generality, particularity, nor inherence, and is not a substance nor is it an action, therefore what remains is that it is a quality. This is very similar to the *Ṣaṣṭitantra*'s *āvīta* or indirect proof, a subcategory of '*sāmānyato-dṛṣṭa*' inference in the form of '*śeṣavat*', which proceeds by the exclusion of all possibilities until only one remains. '*Sāmānyato-dṛṣṭa*' is accompanied this time by a definition: it is an instance of inference where there is no perception of the connection between the mark and its possessor but because of the similarity of the mark with some other thing the unperceived possessor of the mark is known: as, by means of desire, etc., the soul is known, because desire is a quality and qualities must abide in substances, therefore the substance *ātman* (soul) is the abode of the quality *icchā* (desire).[59] This is exactly the way the *Vaiśeṣikasūtras* apply '*sāmānyato dṛṣṭa*' inference at an earlier stratum, in its proof for physical space and the rejected proofs for wind and soul.[60] In fact the very ground on which the *Vaiśeṣikasūtras* reject this sort of inference – that the connection between the mark and its possessor is beyond perception – is freely acknowledged by Vātsyāyana as fact, but is allowed to offer no hindrance. Mere similarity between marks is sufficient, and Vātsyāyana is not troubled by the circumstances that a *particular* substance as substrate for desire might not be revealed by his reasoning.

The *Yuktidīpikā*, whose characterization of 'seeing from the general'

I have already found relevant to the *Nyāyabhāṣya*'s, shows further close similarities with Vātsyāyana's work. Its definition of inference is immediately striking: when one case of two things which are necessarily connected has been correctly grasped by means of perception, and there is perception of another such case, later correct knowledge is produced of the other case of invariably connected entities.[61] Of course the source of this definition would be the same as the *Nyāyabhāṣya*'s: the *Ṣaṣṭitantra*; but the choice of expression and emphasis between the two commentaries is notable, especially when compared to the terse statement of the *Ṣaṣṭitantra*. Further, *pūrvavat* is inference of the effect from seeing the cause, and one of the examples given appears also in the *Nyāyabhāṣya*: the sight of gathering clouds leads one to infer rain. Unlike the *Ṣaṣṭitantra*, the *Yuktidīpikā* is not willing to admit simply that this kind of proof can be faulty because of the possibility of an obstruction, but argues that knowing the efficacy of the cause (and seeing it far enough advanced) permits certainty of the manifestation of the effect. *Śeṣavat* is inference of cause from effect, and here also *Yuktidīpikā* and *Nyāyabhāṣya* share a common example (which is also found in the *Nyāyasūtras*): past rain is known from observing a swollen river.

I have given one definition of *sāmānyato-dṛṣṭa* already from the *Yuktidīpikā*, but in reality the author gives two. First he says that when one has once observed the necessary connection of two objects, the necessary connection of two objects belonging to the same class is known in another time and place; as, when smoke and fire have been seen mutually related, some other time in some other place the existence of another fire is known from the sighting of another column of smoke.[62] This is the way Vṛṣagaṇa characterizes *sāmānyato-dṛṣṭa*, and it is also nearly the equivalent of Vātsyāyana's second definition of '*pūrvavat*'. But the *Yuktidīpikā* specifies that it is *another* smoke and fire which are known, and not the same ones. It is in this context that the Sāṃkhya commentator counters the objection that the supposed necessary connection is too general to be applied to other cases; he retorts that so long as the particularized attribute is seen of one of a pair which are always connected, the same condition is inferred also for the remaining things which are not seen.[63] This, again, is inspired by Vṛṣagaṇa's counsel to observe a mark attentively in its particularity in order to avoid doubt. And finally, the *Yuktidīpikā* introduces the direct and indirect proofs (*vītāvīta*) in two places, once under *śeṣavat* and again

under *sāmānyato-dṛṣṭa* – demonstrating the kind of confusion which resulted from trying to superimpose the *Ṣaṣṭitantra* theory of inference onto the older, three-fold plan.

Superimposing the 'modern' on to the more ancient view was exactly what Vātsyāyana was attempting also, I think. Limitations were set upon his endeavour by the exigencies of the *Nyāyasūtra* assertion that inference is threefold; so, too, the *Yuktidīpikā* was obliged to follow its master, Īśvarakṛṣṇa, who had made the same declaration.[64] If Vātsyāyana can be regarded as working in a milieu of hectic intellectual activity when ideas from the *Ṣaṣṭitantra* were arousing excitement everywhere, his so-called 'confusion' about what constituted the three-fold inference becomes easier to explain. First of all, he does betray some lack of decision by contenting himself with giving two sets definitions for each kind of inference rather than neatly combining all the ideas. Perhaps he was already following some other model here. In any case, he seems to have used the double set of definitions in order to be able to include all the essential points of the *Ṣaṣṭitantra*. His first examples of '*pūrvavat*' and '*śeṣavat*' are just those of the *Ṣaṣṭitantra*, but not ordered under the broader designation of 'seeing from the general'. His second example of '*pūrvavat*' really corresponds to the *Ṣaṣṭitantra* definition of inference in general, and bears great resemblance to his own initial exposition of inference based on previous perception ('*tatpūrvakam*'). Only he never makes any intelligent distinction between the *viśeṣato-dṛṣṭa* (seeing from the particular) and the *sāmānyato-dṛṣṭa* (seeing from the general), and he never thinks of 'seeing from the general' as the prototype of all inferences of previously unseen objects. His second brand of *śeṣavat* has the value of Vṛṣagaṇa's *āvīta* (indirect) verbal formulation of a *sāmānyato-dṛṣṭa* inference in the form of '*śeṣavat*'. He also finds a place in his work, of course, for the direct (*vīta*) proof – that is, for the five-membered syllogism; but that is part of his own Nyāya heritage, not borrowed from the Sāṃkhya, and he leaves it where it belongs in Nyāya tradition, in a separate place, not united with the doctrine of inference itself.

So, the *Nyāyabhāṣya* really does contain the whole of the *Ṣaṣṭitantra* teaching, except that most crucial point, the distinction between 'seeing from the particular': and 'seeing from the general' which permitted the whole grand generalization of inference as means of cognition. The *Nyāyabhāṣya*'s presentation is, of course, casual and disorganized com-

pared to the *Ṣaṣṭitantra*, missing the proper points of emphasis and ignoring the strict logical relations of all the sub-categories of inference. The most conspicuous difference between *Nyāyabhāṣya* and *Ṣaṣṭitantra* is what the former does with 'seeing from the general'. Vātsyāyana has interpreted the words '*sāmānyato-dṛṣṭa*' literally, for both his cases depend on seeing from the general, or seeing of the similarity between two objects or events; solar movement is a naïve example of reasoning by noticing similarities, or by broad analogy, and the appeal to the Vaiśeṣika's universal relation of substance and attribute is an effort to give a theoretical support to the argument from analogy, after the manner of Vṛṣagaṇa. Neither kind of '*sāmānyato-dṛṣṭa*' was original with Vātsyāyana, needless to say.

The *Yuktidīpikā*, as I said, also made an effort to merge *Ṣaṣṭitantra* inference with the three-fold, but accomplished it more efficiently. It also reproduced the whole Vārṣagaṇa idea, except that problematical subdivision into two, *viśeṣato-* and *sāmānyato-dṛṣṭa*. Without finding it necessary to postulate two possibilities for *pūrvavat* or *śeṣavat*, the author of the *Yuktidīpikā* repeated them as the *Ṣaṣṭitantra* has them, and moreover he ordered the direct and indirect proofs (*vītāvīta*) under *śeṣavat* and under *sāmānyato-dṛṣṭa*. What Vātsyāyana makes his second version of *pūrvavat*, the *Yuktidīpikā* absorbs under its own *sāmānyato-dṛṣṭa*. The Sāṃkhya author tries very hard to establish his *sāmānyato-dṛṣṭa* on a solid theoretical foundation, and returns inevitably to something like Vṛṣagaṇa's *sāmānyato-dṛṣṭa*, extending its application meticulously, then, from things of the same class to those of another and to those which are absolutely beyond sensory perception. This is why he gives 'seeing from the general' a double interpretation, I think; but at least his second statement follows reasonably from the first. He has used Vṛṣagaṇa's *sāmānyato-dṛṣṭa* and in order to encompass that master's pronouncement that *sāmānyato-dṛṣṭa* leads to knowledge of the supersensible he has tried to explain how this is done. Either he failed to understand whatVṛṣagaṇa actually intended, or he and perhaps critics before him within the Sāṃkhya found that unsatisfying.

Vātsyāyana did experience, like the compilers of the *Vaiśeṣikasūtras*, massive influence from the *Ṣaṣṭitantra*, in details if not in the overall conception of inference. He did begin to incorporate that most fundamental principle of the *Ṣaṣṭitantra*, the necessary relation between the

mark and its possessor, but did not appreciate the theoretical ground for this concomitance furnished by the postulation of a pair of inferences, one for the particular case, the other made universal for similar cases. The *Ṣaṣṭitantra* must have enjoyed great currency during the fourth and fifth centuries, as Frauwallner has pointed out.[65] Vātsyāyana and Kaṇāda accepted its influence in very different spirit, Vātsyāyana rather casually and genially, Kaṇāda gruffly and with an alert and critical eye. I think it is possible that Vātsyāyana was especially receptive toward the new Sāṃkhya teachings because the Nyāya's sister-school, the Vaiśeṣika, had already begun to open its arms to that source.[66] The influence itself probably comes directly from the *Ṣaṣṭitantra*, however, for the *Nyāyabhāṣya* parallels that work very closely. Vātsyāyana was vehemently attacked by some of his fellow Naiyāyikas for having 'misunderstood' *pūrvavat* (i.e., it should be from effect to cause and not vice versa).[67] I wonder if these critics intended their scorn for the idea itself, ignoring, like Vātsyāyana, the original meaning of the *Nyāyasūtras*, or for Vātsyāyana's audacious borrowing from a rival school.

PART III: GENERAL CONCLUSION ON INFERENCE IN THE VAIŚEṢIKASŪTRAS

After having compared the *Vaiśeṣikasūtras* with the *Ṣaṣṭitantra*, *Nyāyasūtras* and *Nyāyabhāṣyam*, I have been able to reach some conclusions about the evolution of the conception of inference within the *Vaiśeṣikasūtras* themselves. I think that strata of varying degrees of antiquity are apparent, and although I do not claim to have fully isolated them I am prepared to make some suggestions.

An early stratum seems to be revealed by those parts of the *Vaiśeṣikasūtras* which treat the non-existent, *asat*, as object of knowledge, for the question is primarily one of whether one can know what has existed or shall exist but is not now present before the senses; this is principally handled in the first half of Book IX, and in those sutras of Book X which ponder the cognitive relation of present cause to future effect, etc. There is therefore, great resemblance between these musings on knowledge of unperceived objects by means of inference, and what I take to be the meaning of *NS*.I.1.5. I do not notice any evidence within the *Vaiśeṣikasūtras* for the author's awareness of the dispute with the Mādhyamikas over the

reality of time relations, and I take these parts of the text to represent a *relatively* archaic level of thinking.[68] The Sūtra-writer already betrays that critical and analytical attitude which I think is characteristic of the Vaiśeṣika masters: he examines and explains how cognition does take place, and in fact, it occurs by the observation of marks (X.6, for example: one knows that an effect shall exist because one has seen another, a 'co-inhering', effect). The idea of inferential knowledge produced from the real perception of visible marks is, I think, fundamental in the *Sūtras*, and of very early date. It was *later* that the Vaiśeṣikas began to feel doubts about their own doctrine of the mark – when they rejected the marks of wind and of soul as leading to correct and sufficient knowledge of those invisible substances.

The proof, therefore, for physical space (*VS*.II.1.25–6) must also be from an earlier stratum of the text, for sound is frankly accepted as the legitimate mark of space. So, too, touch must once have been the agreed upon mark of wind, while the twelve marks of the soul functioned similarly for that substance. *NS*.I.1.10 and III.1.1–26 repeat this view of the soul and its attributes, and other texts, such as Āryadeva's *Śataśāstra*, identify the proof which established soul as substrate of desire, inhalation, etc., as that of the Vaiśeṣikas.[69] These marks are able to serve as such because they are attributes which can be known only if they inhere in substances;[70] the relation of inherence, therefore, lay at the root of these proofs for the substances. The relation, which became one of the four famous 'connections' (*sambandhāḥ*) of *VS*.III.1.8 and IX.18, is given no emphasis, it is only assumed to be self-evident for anyone who knows the principles of the Vaiśeṣika category doctrine. Inherence, in the Vaiśeṣika system, is a relation of material causation,[71] and has consistently remained, I think, the most important relation between entities operating within the system.

Candramati, in his *Daśapadārthaśāstra*,[72] retains the proof of soul which knows it as inherent cause of cognition and the rest. By his time cognition was recognized as an attribute of soul, then, and the old proof for soul was still found acceptable – even to one who had boldly embraced the *Ṣaṣṭitantra*'s 'two-fold inference'. He apparently detected no contradiction between that proof and the theory of 'seeing from the general'. He defines 'seeing from the general' in a way that conforms with the *Ṣaṣṭitantra*, and with the *Vaiśeṣikasūtras*' theory of relations, and asserts that it explicitly produces knowledge of something

completely unseen.[73] I do not think it necessary to suppose that Candramati necessarily antedated those passages in the *Vaiśeṣikasūtras* which reject both the proof of soul which depends upon its attributes, and the *sāmānyato-dṛṣṭa* inference; he may merely have belonged do a different branch of the Vaiśeṣika school. But I think it is very clear that another stratum is reached in the *Sūtra* text when this sharp turnabout in the attitude towards inference occurs.

Perhaps there was some sort of transition period between the "archaic" level in the *Vaiśeṣikasūtras* (where speculation was on knowledge related to time, and proofs rested on unexamined acceptance of relations implicit in the category doctrine) and that point at which the full impact of the new-style Sāṃkhya two-fold inference was strongly felt and criticized. Although Candramati was able to harmonize satisfactorily, for his own mind, the *Ṣaṣṭitantra*'s *sāmānyato-dṛṣṭa* with the Vaiśeṣika relations, and proof for soul, I am not sure the *Vaiśeṣikasūtras* meant to do this. I think *that* proof for soul undoubtedly pre-dates the *Ṣaṣṭitantra* since it is mentioned by Āryadeva. The Sūtra-writers may have taken quite awhile to decide, however, that their old proofs could no longer support themselves under the attack of their own school's new epistemologists. Meanwhile, I think the Vaiśeṣika was developing its own theory of relations with respect to cognition. There was already a tendency to merge knowing in the three points of time with two kinds of relations: cause-effect, or inherence (see Book X), and the relation of two contraries to one another (see Book IX). The four relations on which inference is grounded, as they stand in the *Vaiśeṣikasūtras*, incorporate the idea of time relations only tangentially; by the time they were written, I think the transition away from the earlier compulsion to concentrate on past and future as location of the unseen objects of inference had been completed. On this point also Candramati followed his own course: he put the non-existent into a separate category, *abhāva* (non-being), but he also retained the relationship of contraries (*virodha*); for the contrary, whether existent or non-existent, is still a mark of the object of cognition.

At what point the idea of the contraries-relation was settled I cannot say, but causation was absolutely fundamental to the Vaiśeṣikas from the beginning: as philosophers preoccupied with the natural world, they tried to explain how its parts, its elements, its events were related to each other as cause and effect; when physical explanations failed them, they

were even prepared to take refuge in the idea of an Unseen Cause (the principle of *adṛṣṭa*).[74]

Now, it is not difficult to imagine how the idea of cause and effect came to be closely identified by someone with that of past, present and future, for cause and effect are conventionally thought of as related to one another in time. In the *Nyāyasūtras*, '*pūrvavat*' and '*śeṣavat*' have reference to time, but the *Ṣaṣṭitantra* and *Nyāyabhāṣya* make them into indicators of causal relations. Candrānanda's comments on '*asat*' (the non-existent) in Book IX show that he, too, was automatically uniting the ideas of existence/non-existence and time with cause-effect.[75] The *Vaiśeṣikasūtras* themselves, in Book X, on causation, are also merging all these ideas. It seems to me that the intellectual process of bringing these ideas together is a natural enough one so that it is not necessary to suggest that *one* person suddenly discovered their intimate connection. Some one person must have been the first, however, to declare that '*pūrvavat-śeṣavat*' MEANT having a cause and having an effect, rather than merely occurring before or after something else. I think the earlier levels of the *Vaiśeṣikasūtras* reflect a period when the relation of time to the production of knowledge was being thought about in terms of causation, and this should have occurred between the period of the *Carakasaṃhitā* and *Nyāyasūtras* I.1.5, and that of the *Ṣaṣṭitantra*, a period when the Mādhyamika thinkers were no doubt very busy also.[76] Probably someone not long before Vṛṣagaṇa's time – or that philosopher himself – was the first to describe '*pūrvavat-śeṣavat*' as essentially a causal relation.

At some point, the new propositions of Vṛṣagaṇa burst upon the consciousness of the Vaiśeṣikas, and the Vaiśeṣikas turned upon them a keenly critical eye. I think it was probably under the impact of Vṛṣagaṇa that the Vaiśeṣikas began to re-examine their own methods of reasoning. That is, I think it was not that the Sūtra-writers adopted the whole body of Ṣaṣṭitantra principles, as Candramati did, but they were themselves inspired by the incisiveness of Vṛṣagaṇa's thought to new levels of creative inquiry. They finally rejected, as a result, not only their own time-honored proofs for the unseen substances, but went further and rejected what had inspired their critical re-evaluation: Vṛṣagaṇa's own theory of inference!

So far as strata within the text of the *Vaiśeṣikasūtras* themselves are concerned, I think it is clear that the 'physical-space' proof is part of a rather old stratum, the 'wind' proof with its rejection of the use of 'seeing

from the general' and its resort to scripture is from a more recent and definitely post-*Ṣaṣṭitantra* level, and the proof of soul by means of self-consciousness is still later. The single passage *VS*.III.2.4–14 alone reveals at least three levels of consideration, III.2.4 with its catalogue of the marks of the soul being the earliest and III.2.6–8 contemporary with the post-*Ṣaṣṭitantra sūtras* on wind, II.1.15–16. Frauwallner[77] thinks all these latter sūtras, on wind and soul, are 'interpolations', and I agree. But I feel that the argument from self-consciousness is probably also a later insertion and was added because some Sūtra-writer did not care to let the matter end with an appeal to scripture.[78] *VS*.III.2.9 does suggest this reading: soul is known not just from scripture, because of the restricted use of the word 'I'.[79] Exactly what sort of proof this was intended to be, I am not sure. In fact, I imagine that it was never intended to fit the *Ṣaṣṭitantra* definition of '*sāmānyato-dṛṣṭa*' inference, or any other. When in *Sūtras* 13 and 14, body is eliminated as the potential point of reference for the word 'I' and soul remains as the only other conceivable possibility, this sounds suspiciously like the *Ṣaṣṭitantra*'s *āvīta* (indirect) proof which, proceeding from the establishment of an (unseen) cause from a perceived effect, then argues to eliminate all possible causes for that effect but one. I am sure that a profound and all-pervading influence from the circle of the *Ṣaṣṭitantra* is revealed here, but I suspect nonetheless that the Sūtra-writer did not intend to follow that rival text, but meant to go off quite independently in a manner that he supposed to be original.[80]

The author of this later level of the *Vaiśeṣikasūtras* has, I believe, perceived the essential flaw in the *sāmānyato-dṛṣṭa* inference: that the connection between observed mark and its imperceptible possessor is impossible of direct apprehension, and that therefore such a mark can never give specific knowledge of a particular unseen entity. Rather than reasonable certainty, only doubt is really achieved by such a cognitive process (see *VS*.II.2.19). The Sūtra-writer could not offer a solution to the problem, only explode the theory. One *sūtra*, IX.6,[81] does approach the Vārṣagaṇa definition quite closely, and this may be the contribution of one compiler who was ready to accept openly the Sāṃkhya position. This appears in the midst of the section on the existent and non-existent (*sadasat*), which *may* mean that some Sāṃkhya influence was being felt already at that earlier level; I have not meant to suggest, after all, that the Vaiśeṣika reflections on time and non-existence are as ancient as those

of the *Nyāyasūtras*. I presume that they formed a continuum, from very early in the history of the school, until they were absorbed and then largely superseded by thinking which found them no longer very interesting.

The Vaiśeṣikas remained persistently uncomfortable, I think, with the idea of 'imperceptibility' itself. Even the proof of soul by using the concept of self-awareness is expressed in III.2.13 as though the soul could be directly PERCEIVED by this means rather than cognized in some other way.[82] Frauwallner points out that in *VS*.III.1.8–14, inference as means of cognition is expounded in some detail, and only afterwards is perception (briefly) introduced; this, he says, is clearly borrowed from the *Ṣaṣṭitantra* – which sounds convincing – since the Vaiśeṣikas normally stressed perception.[83] Book IX does find a place for the absolutely non-existent (IX.5,9), but, if one is to trust Candrānanda, by the time the sūtras on the four relations were composed, the notion of contraries (*virodha*) which encompasses really what is currently unseen (='non-existent') has no more to say about the absolutely non-existent. And, although the Vaiśeṣikas never denied the existence of the mysterious 'Unseen Cause' (*adṛṣṭa*) of physical and psychological events, they conspicuously never tried to PROVE its existence.

The heart of the 'inference-theory' of the *Vaiśeṣikasūtras*, like that of the *Ṣaṣṭitantra*, is the thesis that there are fixed relations on which an inference can be grounded. Frauwallner opines that the Vaiśeṣikas borrowed also this, in essence, from Vṛṣagaṇa.[84] I think the concept of relations, especially that of cause-effect or inherence, is native to the Vaiśeṣikas. They explained the natural order as composed of parts intimately related to one another; to conceive of these parts as objects of cognition standing in essential relation to one another was no logical leap for them. The actual impetus to formulate a theory of connections as the foundation of inference may have been lent them, indeed, by the Sāṃkhya; but I think it probably only hurried them onward a bit faster in the direction in which they were already travelling.

I think the development of the notion of the four relations was gradual, and that inherence (*samavāya*) and the notion of contraries (*virodha*) probably received the earliest attention. The Sūtra-writer, moreover, even after having discovered the *Ṣaṣṭitantra*, seemed not quite to realize what Vṛṣagaṇa was about, or at least disapproved of it. The *Vaiśeṣikasūtras* do not

generalize the relations so deliberately as the *Ṣaṣṭitantra*; neither text, of course, developed a theory of *vyāpti* or invariable concomitance comparable with Dignāga's or Praśastapāda's or Dharmakīrti's. I wonder why it should be assumed that, in this case, the influence came only from the direction of the Sāṃkhya; I think it likely that there was mutual exchange here, and Vṛṣagaṇa may have been inspired by some of the Vaiśeṣikas' tentative efforts to work out a way of expressing the concept of necessary connection between entities. The approaches of the two texts are somewhat different; each naturally selected particular relations compatible with its own system.

The Sūtra-writer responsible for the final expression of the Vaiśeṣika connections seems less comfortable with his own suggestion than did Vṛṣagaṇa with his version, however, and I think this may be for two reasons: some archaic elements remain, particularly as part of the notion of contraries (*virodha*), which were difficult to assimilate; and no really complete theory of inference was advanced comparable to Vṛṣagaṇa's. In fact, as already mentioned, Kaṇāda remains less happy with inference than with perception.

The notion of contraries seems to me to offer many problems, and I believe its inscrutability is mostly due to its being really an 'old-fashioned' idea, standing somewhere between the old and new. In fact, I do not see why it should even be found among the relations, except that it is within the scope of this relation that much of the long history of Vaiśeṣika speculation on time and non-existence found a place reserved for it. And for one other reason: the 'Vaiśeṣika method' is analysis and arrangement of things according to their similarities and dissimilarities, and surely this, too, is one of the older characteristics of the school.

The words *virodhi*, *virodha* are very close to *viruddha*, which is used by both Candrānanda and Praśastapāda for one of the 'false marks'.[85] A '*virodhi*', according to Candrānanda, is an allowable mark and generates certainty; '*viruddha*' is a non-mark, it is not connected with what is to be proved but with its opposite. I suspect that there was ambiguity in the terms at least by Praśastapāda's time, which might have insured the eclipse of the *virodha* (notion of contraries) connection in short order even without benefit of Dignāga's 'revolution' in logic.

Candramati was no innovator on this subject, like Praśastapāda. He repeats the *Vaiśeṣikasūtras'* four relations, but orders them carefully under

inference 'without seeing a common property',[86] which is apparently meant to be the *Ṣaṣṭitantra*'s *sāmānyato-dṛṣṭa.* Among the earlier Indian philosophers scarcely any besides the Vaiśeṣikas (the Sūtra-writers, Candramati and Praśastapāda) retain the *Ṣaṣṭitantra*'s two-fold division of inference into "seeing from the particular', *viśeṣato-dṛṣṭa* (which is '*dṛṣṭam liṅgam*', the perceived mark, to the *Vaiśeṣikasūtras* and Praśastapāda) and *sāmānyato-dṛṣṭa* 'seeing from the general'; not even the other extant Sāṃkhya works do so.[87] And only Candramati accepts the two-fold inference as definitive. He preserved Kaṇāda's own words within the context of *Ṣaṣṭitantra* inference. The later contributors to the *Vaiśeṣikasūtras* were a remarkably critical and testy lot, I find; in contrast to Candramati, they subjected Vṛṣagaṇa's epistemology to a harsh analysis. Some, like the composer of *VS*.IX.6, permitted friendly access to those ideas; but the latest writers represented, those responsible for the final formulation of the relations, for the proof of soul by way of self-consciousness and the outright rejection of 'seeing from the general' inference, were openly antagonistic.

The *Vaiśeṣikasūtras* finally present '*sāmānyato-dṛṣṭa*' as something rather different from the *Ṣaṣṭitantra* meaning, by simply denying the possibility that it could bring about knowledge of the unseen. Vṛṣagaṇa had used it as the focal point of his theory because it could be used to establish the unseen (he thought); but his real contribution was to explain how inference worked and why it worked. He was replacing simple reasoning by arbitrary analogy with a solid basis for those analogies: the necessary and indubitable relation between things. The kind of 'proofs' used before him are quite easy to refute, by citing opposing examples, and the result was an endless and ineffectual parade of examples and counter examples.[88] It was the Buddhists, Vasubandhu, the author of the *Tarkaśāstra*, and Dignāga, who finally found a clear formula for the formal relation of *hetu* (reason or mark) to *sādhya* (what is to be proved), and thus constructed the foundation for an exact proof. But Vṛṣagaṇa, and also Kaṇāda, were working toward this end already.[89] Dignāga criticized both thoroughly quite heavily on the connections, *sambandhāḥ*, realizing their contributions as well as their shortcomings, and he built upon the former.

The '*sāmānyato-dṛṣṭa*' inference, despised by Dignāga, rejected by the *Vaiśeṣikasūtras*, did not, however, perish. On the contrary, it had a long

and fruitful history, and was, I would say, not essentially improved upon beyond the point at which the *Ṣaṣṭitantra* left it. Theories of invariable concomitance (*vyāpti*) became more sophisticated, it is true; but '*sāmānyato-dṛṣṭa*' based on these lived on in order to serve one purpose, to prove the unseen. For this reason it had a lasting appeal for the Nyāya-Vaiśeṣikas, who had several 'unseens' to establish: Praśastapāda used it for soul;[90] Uddyotakara and Vācaspatimiśra used it for the Lord (*īśvara*)'[91] Objections can always be raised to such inferences, by non-believers such as Kaṇāda; for, what is to be proved is essentially something unprovable, that is, something which is accepted from faith or prior conviction. Proof is an afterthought. What is to be proved by such means, whether primeval matter or soul or the Lord, is something 'pre-logical'. One who believes can accept the proofs proffered; a 'realist' or 'materialist' or 'atheist' can always find flaws, for the supersensible remains inherently beyond purely logical argument.

APPENDIX I

Summary of Statements on Inference from Other Vaiśeṣika Texts

1. Candramati, *Daśapadārthaśātra* (*ca.* 450–550 A.D.):
   E. Frauwallner, 'Candramati und sein Daśapadārthaśāstram', in *Studia Indologica, Festschrift für Willibald Kirfel*, Bonn 1955.
   Inference is two-fold: (1) inference from seeing a common property: one perceives a mark, which causes recollection of a connection between mark and its possessor, and arouses cognition of the unseen possessor; (2) inference from not seeing a common property: one perceives a cause, an effect, a conjunct, a co-inherent, or a contrary, and recalls the relevant connection, which arouses the cognition of something absolutely unperceived.

(Frauwallner, 'Candramati', p. 73–4; H. Ui, *The Vaiśeṣika Philosophy according to the Daśapadārtha-Sāstra*, Varanasi 1962[2]: *Chowkhamba Sanskrit Studies* **22**, p. 97) The first kind of inference is one based on an empirically established connection, the second rests upon generally valid connections, says Frauwallner ('Candramati', p. 79). The meaning would be just that of the *Ṣaṣṭitantra*, then.

The terminology is rather peculiar, however; assuming the Chinese is a literal translation, (1) would be '*sāmānyaṃ darśanād*', 'from seeing a common property', (2) would be '*sāmānyam adarśanād*', 'from not seeing a common (property)'. One of the sources used by Jayanta, which was probably a sub-commentary to the *Nyāyabhāṣya*, reads the end of *NS* I.1.5 as '*sāmānyato 'dṛṣṭam*', 'not seen from the general'. I wonder if this is coincidence, or if there was a real tradition for such a reading. The *Vaiśeṣikasūtras* do use *adṛṣṭam liṅgam*, 'unperceived mark', and *sāmānyato dṛṣṭam*, 'seeing (= seen) from the general', *almost* as synonyms. (See also G. Oberhammer, 'On the Sources in Jayanta Bhaṭṭa and Uddyotakara', *Wiener Zeitschrift für die Kunde Süd- und Ost-Asiens* (to be abbreviated as *WZKSO*) 6 (1962), pp. 96–7.

2. 'Vṛttikāraḥ' (an otherwise unidentified Vaiśeṣika writer, quoted twice by Candrānanda, on *VS*.IX.18 and 21). From seeing beyond any doubt one part of the object (which is connected with the rest) by means of such an established connection, that perception of the remainder is the inference arising from the seeing of the mark. (IX.18: *evaṃvidhaprasiddhasambandhasyārthaikadeśam asandigdhaṃ paśyataḥ śeṣānuvyavasāyo yaḥ sa liṅgadarśanāt sañjāyamāno laiṅgikam*)

This resembles the *Ṣaṣṭitantra* of course, and *VS*.IX.6 somewhat, but is closest to Praśastapāda: see below.

3. Praśastapāda, *Padārthadharmasaṃgraha* (ca. second half of sixth century: E. Frauwallner, *Geschichte der Indischen Philosophie*, II, Salzburg 1956, p. 188.) The mark is the cause of the inference of the thing not established... The mark of the other is always necessarily connected with (it) in time and place.

   As: where smoke is, is fire; where there is no fire there is no smoke. Thus because of seeing smoke (when) there was no doubt of the case as established, from the recollection of that association, there is apprehension of fire in another case. (*Padārthadharmasaṃgraha*, p. 200)

This is the definition of concomitance followed by its application which Praśastapāda gives after his version of the *trirūpahetu* 'the theory of the inferential mark which meets three conditions for validity', and which should be close, therefore, to Dignāga. It also bears a great resemblance, I think, to the *Ṣaṣṭitantra*'s definition, which must indicate, then, to what extent the *Ṣaṣṭitantra* had attained a position compatible with Praśasta-

pāda's and Dignāga's. Praśastapāda does emphasize that the mark must be indubitable, a lesson he could have learned from the *Ṣaṣṭitantra* or from the *Vaiśeṣikasūtras*, as well as from Dignāga. It is this passage which the 'Vṛttikāra's' statement so resembles; that writer also places great emphasis on the avoidance of doubt.

Praśastapāda has much more to say on inference, and later gets to the two-fold inference:

(1) '*dṛṣṭam liṅgam*' (perceived mark) is a case where one has seen a cow with a dewlap and observed that the dewlap is peculiar to the cow; later, seeing an animal with a dewlap, one infers it is a cow. In such cases, what has been established and what is to be proved are of the same class.

(2) '*sāmānyato dṛṣṭam liṅgam*' (mark seen from the general) one has observed that in some cases the farmer, etc., works for a certain aim (and gets it), and concludes that those leading a religious life reach their aim also although it is not visible.

In such a case, what has already been established and what is to be proved are of dissimilar kinds. The means of knowledge is the seeing of the mark... (*Padārthadharmasaṃgraha*, Vizianagram Sanskrit Series 4, Benares 1895, pp. 205–6; B. Faddegon, *The Vaiśeṣika System*, Amsterdam 1918, pp. 303–4:

tattu dvividham/ dṛṣṭam sāmānyato dṛṣṭam ca/ tatra dṛṣṭam prasiddhasādhyayor atyantajātyabhede 'numānam/ yathā gavy eva sāsnāmātram upalabhya deśāntarepi sāsnāmātradarśanād gavi pratipattiḥ/ prasiddhasādhyayor atyantajātibhede liṅgānumeyadharmasāmānyānuvṛttito 'numānam sāmānyato dṛṣṭam/ yathā karṣakavaṇigrājapuruṣāṇāṃ ca pravṛtteḥ phalavattvam upalabhya varṇāśramiṇām api dṛṣṭaṃ prayojanam anuddiśyapravartamānānāṃ phalānumānam iti/ tatra liṅgadarśanaṃ pramāṇaṃ...

The '*dṛṣṭam liṅgam*' is derived, like Candramati's first inference, from an empirically established connection. The example is, of course, the same as the *Vaiśeṣikasūtras*' own '*dṛṣṭam liṅgam*' (II.1.8). '*Sāmānyato dṛṣṭam*' here is really only a loose argument by analogy, and would not even stand the test of application of Praśastapāda's own definition of concomitance, above. This is not the *Ṣaṣṭitantra* '*sāmānyato dṛṣṭam*'. Interestingly, then,

Praśastapāda does not use this kind of inference himself when he is really intent on establishing a proof, but he does use proofs conforming to the definition of inference which I first cited above. And when he argues for soul, he uses a proof, already described, which I think is a *sāmānyato dṛṣṭa* proof of the kind recognized by Vṛṣagaṇa. As subordinate proof, he employs that for soul from its attributes which must inhere in a substrate, then eliminates body and mind as credible seats for these: again, a *śeṣavat-āvīta*-style expression of the proof (that is, the indirect proof of that which has something following it).

4. Candrānanda (post-Uddyotakara, prob. seventh century: Sandesara, *Foreward*, p. viii, and Thakur, Introduction, p. 22: *Vaiśeṣikasūtram of Kaṇāda, with the commentary of Candrānanda*, Baroda 1961: Gaekwad's Oriental Series, 136)
   The four relations of *VS*.III.1.8 are explained thus:
   (1) *saṃyogi* (conjoined) is the relation of smoke to fire,
   (2) *samavāyi* (inherent) is the relation of horns to cow,
   (3) *ekārthasamavāyi* (co-inherent) is the relation of:
      (a) an effect to another effect, as color to touch,
      (b) a cause to another cause, as hand to foot,
   (4) *virodhi* (contrary) is the relation of:
      (a) the non-existent storm (as mark) to the existent conjunction of wind and cloud,
      (b) the existent storm to the non-existent conjunction of wind and cloud,
      (c) the non-existent dark color (of the clay pot) to the non-existent conjunction with fire,
      (d) the existent effect to the existent conjunction with cause.

On III.1.9: What is established is the conjunct, etc., not the unconnected, (and) what is known is by means of that; the mark, also, is of this other thing because of the state of being connected (with it), (it is) not the unconnected (thing).

(prasiddho yaḥ saṃyogyādir nāsambaddho yena saha jñātaḥ sa tasyārthāntarasyāpi liṅgaṃ sambaddhatvāt, nāsambaddham)

On IX.18: Having indicated only the connection by (words such as) 'this

is of that', (the connection is further) defined by means of (the words) 'effect, cause', etc. By grasping (the relation) 'cause and effect', (then) after observing only the inhering (thing), there is grasping also of the class, etc.

(asyedam iti sambandhamātram darśayitvā 'kāryaṃ kāraṇaṃ' ity ādinā viśinaṣṭi/ "kāryakāraṇagrahaṇena samavāyimātropalakṣaṇāj jātyāder api grahaṇam...)

On IX.19 (the subject is *śābda*, testimony, which is only a kind of inference or *anumāna*): Since inference is dependent on recollection of the effect (relation), etc., and (has as object) a sense object (present in one) of the three points of time or (one which is) absolutely beyond sense perception, therefore testimony is (also) dependent on recollection of (such) a connection and (has as object) a sense object (present in one) of the three points of time or the absolutely supersensible.

(yathā kāryādismṛtisavyapekṣam anumānaṃ trikālaviṣayam atīndriyārthaṃ ca tathaiva śābdam saṅketasmṛtyapekṣaṃ trikālaviṣayam atīndriyārthaṃ ca.)

On IX.22 (on *smṛti*, recollection, which is also part of inference or *anumāna*):

For one wishing (to know) fire, what has produced that (knowledge) is the seeing of smoke, because of the dependence (of smoke) on it, because of the conjunction of the internal organ with soul and because of being particularized, from the mental impression, the memory 'where there is smoke there is fire' is produced.

(agnyarthino dhūmadarśanaṃ yad utpannam tadapekṣād ātmāntaḥkaraṇasaṃyogād viśiṣṭāc ca bhāvanākhyasaṃskārād 'yatra dhūmas tatrāgniḥ' iti smṛtir utpadyate.)

I would say that all of these definitions disclose their double parentage: out of the circle of the *Ṣaṣṭitantra*, modified by the Vaiśeṣikas and especially by Praśastapāda. Concomitance as a general principle, beyond the limitations of particular real relations, seems well-appreciated.

On 'seeing from the general':
On IX.8 (7 and 8 are on knowledge of the non-existent produced from seeing its contrary: as, from seeing the cauldron (*sthālī*) which is the contrary-to-jar (*ghaṭa*), one knows the non-jar (*a-ghaṭa*):

> Therefore, from seeing from the general, if the merit in night-ablutions, etc., has been comprehended, (knowledge of) *adharma* 'non-merit' is produced.

(tathā sāmānyato darśanād rātrisnānāder dharmatve sambhāvite 'adharmaḥ' ity utpadyata iti...)

On III.2.6–7:

> There is no production of inhaling, etc., without an efficient cause, or of pleasure, etc., without a substrate, thus there must be apprehension of them by means of some sort of efficient cause and substrate; then, also, because of having seen from the general, because there is no exclusion of ether, etc., no particular (is established).

(*11*.15 = 16; prāṇādīnāṃ nirnimittānām sukhādīnāṃ cānāśritānām anutpattiḥ, ata eṣāṃ kenāpi nimittenāśrayeṇa bhāvyam, ity ato 'pi sāmānyato dṛṣṭād ākāśādīnām anirāsād aviśeṣaḥ, teṣām api hetutvasambhavāt.)

On doubt and certainty:
On X.4 (doubt, etc., are known by perception and by inference):

> Because the mark has been seen and there is recollection, knowledge is produced when there is no (further) perception; therefore because of seeing only the general, because of recollection, because of desiring to know the particular, if there is no grasping of the particular, doubt is produced: 'Is it a column or a man?' And because by force of the connection (of the senses, etc.) with the existent (before the senses) object, perception arises, 'This is indeed an existent object', therefore by force of the connection with the particular (entity), when there is cessation of doubt, 'This is indeed existent (before the senses)', certainty is produced.

(yathā smṛtimata ātmanaḥ pratyakṣaṃ liṅgaṃ dṛṣṭvā apratyakṣe jñānam utpadyate tathaiva sāmānyamātradarśanāt smṛtimato viśeṣaṃ jijñāsor

agṛhīte viśeṣe 'sthāṇuḥ puruṣo vā' iti jāyate saṃśayaḥ/ yathā ca bhūtārtha-sambandhavaśena "ayam evaṃbhūto 'rthaḥ" iti pratyakṣam utpadyate tathaiva viśeṣasambandhavaśena nivṛtte saṃśaye "idam evaṃbhūtam" iti nirṇayo jāyate.)

Candrānanda makes no guiding distinction between two kinds of inference, but, like the *Vaiśeṣikasūtras* and Praśastapāda, differentiates the perceived mark (*dṛṣṭa liṅga*) from the unperceived (*adṛṣṭa*) or from the rational process of seeing from the general (*sāmānyato-dṛṣṭa*). The *Vaiśeṣikasūtras*' real alternative to *sāmānyato-dṛṣṭa* seems often to be, not another kind of inference, but direct perception itself, and Candrānanda essentially preserves this inclination. Again, his thoughts on doubt demonstrate how the Vaiśeṣikas tended to mingle the processes of doubting and that of seeing from the general. He personally has no consistent attitude toward *sāmānyato-dṛṣṭa*, since he recognizes its validity in one place (on IX.8); and denies it elsewhere (on III.2.6–7), in order to conform to the Sūtra-writer's position.

APPENDIX II

Statements on Inference from some Non-Vaiśeṣika Texts as Evidence for Influences Received from the Ṣaṣṭitantra

1. *Sāṃkhyakārika*, 5 (before 500 A.D.: E. Frauwallner, *Geschichte...*, I, p. 286) (from Haridāsa-Saṃskṛta-Granthamālā, 132; Chowkhamba Sanskrit Series Office, Banaras, 1953) ... Three-fold inference has been explained; it is preceded by the mark and the possessor of the mark ... (*trividham anumānam ākhyātam/ tal liṅgaliṅgipūrvakam* ...)

What happened between Vṛṣagaṇa's time and Īśvarakṛṣṇa's to make the latter return to a three-fold inference is not clear. The prominence of the terms *liṅga* (mark) and *liṅgin* (possessor of the mark) appearing beside the division into three suggests to me Nyāya influence.

2. Commentators on the *Sāṃkhyakārikā* (who mostly discuss the three kinds of inference):

(a) *Māṭharavṛtti* (perhaps pre-500 A.D.: E. Frauwallner, *Geschichte...*, I, p. 287) (from A. B. Dhruva, '*Trividham Anumānam* or a study in

Nyāyasūtra I.1.5', *Proceedings and Transactions of the 1st Oriental Conference, Poona* I (1920), p. 256).

Pūrvavat is inference from former experience. (Cf. *Ṣaṣṭitantra* 'seeing from the particular' (*viśeṣato dṛṣṭa*), *Nyāyabhāṣya* PŪRVAVAT 2)

Śeṣavat is inference from a part to the remainder, as from one drop of salty water one concludes the rest are salty. (Cf. *Ṣaṣṭitantra* 'inference in general'; *Upāyahṛdaya*, and Gauḍapāda ŚEṢAVAT, *Yuktidīpikā* SĀMĀNYATO-DṚṢṬA)

Sāmānyato-dṛṣṭa is argument on general principles which must apply to all individuals of a class, as, since these mango trees have flowered, those must have. (Cf. *Ṣaṣṭitantra* SĀMĀNYATO-DṚṢṬA, also *Yuktidīpikā*)

Both *śeṣavat* and *sāmānyato dṛṣṭam*, here, are based on analogies, empirically grounded. All three inferences are really the same, although the object of *śeṣavat* seems to be distinguished from the others. This *pūrvavat* is probably actually the *Ṣaṣṭitantra* VIŚEṢATO-DṚṢṬA.

(b) Gauḍapāda (after 500 A.D.: Frauwallner, *Geschichte...*, I, p. 287) from G. Tucci, *Pre-Diṅnāga Buddhist Texts on Logic from Chinese Sources*, Baroda 1929 (Gaekwad Oriental Series, 49), p. xviii.

Pūrvavat: when one infers rain from the sight of clouds. (Cf. *Nyāyabhāṣya* PŪRVAVAT 1; *Yuktidīpikā*)

Śeṣavat: one drop of water tastes salty, therefore the others must be. (Cf. *Māṭharavṛtti*, *Upāyahṛdaya*; *Yuktidīpikā* SĀMĀNYATO-DṚṢṬA)

Sāmānyato-dṛṣṭa: *ātman* is inferred from the existence of pain, joy, etc. (Cf. *Nyāyabhāṣya* 2; this is a standard Nyāya-Vaiśeṣika proof)

(c) Vācaspatimiśra, *Sāṃkhyatattvakaumudī* (ca. 850 A.D.: Frauwallner, *Geschichte* ... I, p. 287) (from A. Bürk, 'Die Theorie der Schlussfolgerung (Anumāna) nach der Sāṃkhya-tattva-kaumudī des Vācaspatimiśra', *Wiener Zeitschrift für die Kunde des Morgenlandes* 15 (1901), pp. 252–60; because of Vācaspati's late date I am giving only his comments on three-fold and two-fold inference) (see A. B. Keith, *Indian Logic and Atomism*, Oxford 1921, pp. 90–2, also) Inference is of two kinds: *vīta* and *āvīta* (direct and indirect). *Vīta* or direct proof is also of two kinds:

Pūrvavat: the object to be proved is a general concept, the specific mark of which is perceived (*dṛṣṭasvalakṣaṇasāmānyaviṣayam pūrvavat*),

as, there is fire on the mountain because there is smoke, as in the kitchen. (This is expressed as a five-membered syllogism.)

Sāmānyato-dṛṣṭa: the object to be proved is a general concept whose specific mark is not perceptible (*adṛṣṭasvalakṣaṇasāmānyaviṣayam...*), as the perception of color requires an instrument, namely the visual sense organ, for perception is an action; every action is connected with an instrument, as the felling of a tree with an axe; therefore the visual organ exists.

Āvīta or indirect proof is *śeṣavat*, which is an argument to exclude all possibilities but one; as, threads and cloth are not different because there can be neither coming together (as with bowl and fruit) nor separation (as with the Himālaya and Vindhya) between them.

Vācaspati, while betraying his post-Dignāga, post-Dharmakīrti date, has preserved the *Ṣaṣṭitantra* teaching to a remarkable degree, but ordered in another fashion. *Pūrvavat* is close to the *viśeṣato-dṛṣṭa* of the *Ṣaṣṭitantra*, *sāmānyato dṛṣṭa* close to that text's, and *āvīta-śeṣavat* is Vṛṣagaṇa's *śeṣavat-āvīta*. The *Ṣaṣṭitantra* tradition, then, was not lost by the ninth century, but had become somewhat garbled.

3. Śabarasvāmin, *Pūrvamīmāṃsāsūtrabhāṣya* (beginning of sixth century: Frauwallner, *Geschichte*... II, p. 23) (from Dhruva, *op. cit.*, pp. 257–8; Tucci, *op cit.*, p. xviii) *Anumāna* (inference) is a movement of thought from a part which is present before the senses to another part which is not so, by virtue of their being known to be associated.

Anumāna is of two kinds:

pratyakṣatodṛṣṭasambandha ('the connection has been known because of perception') as, knowledge produced from the connection of fire with smoke,

(Tucci ascribes to Śabarasvāmin on *pūrvavat* the example of inferring rain from the sight of clouds)

sāmānyatodṛṣṭasambandha, ('the connection has been known from the general case') when the connection between *sādhya* (what is to be proved) and *hetu* (the reason or mark) is not apprehended by the senses but is known only in general, as when the sun's motion is known from its presence in a new spot in the sky.

Here, again, Vṛṣagaṇa has left his mark. This is one of the few texts I have encountered outside the Vaiśeṣika which teaches the two-fold inference,

in the manner of the *Ṣaṣṭitantra*. Śabarasvāmin emphasizes the connection as cause of knowledge. The example given for *sāmānyato-dṛṣṭa* reappears in several texts (*Nyāyabhāṣya, Yuktidīpikā, Upāyahṛdaya,* Ts'ing-mu, Kauṇḍinya); whether it actually meets Vṛṣagaṇa's criteria seems to me questionable.

4. Kauṇḍinya, *Pañcārthabhāṣya* on *Pāśupata Sūtras* (between fourth and sixth centuries A.D.: *Pāśupata Sūtras with Pañcārthabhāṣya of Kauṇḍinya* (ed. with Introduction by R. A. Śastri), Trivandrum 1940 (Trivandrum Sanskrit Series, 143).

(*Bhāṣya*, p. 7, *ll*.8–15; S. Dasgupta, *History of Indian Philosophy*, V, Cambridge 1955, p. 133.) Inference (*Anumāna*) which is preceded by perception is two-fold: seen (*dṛṣṭa*) and seen from the general (*sāmānyato-dṛṣṭa*).

Dṛṣṭa is also of two kinds:

Pūrvavat is when one has previously seen a person with six fingers and seeing him again knows him to be the same. (Cf. *Upāyahṛdaya* for the example)

Śeṣavat is when one sees just the horns, etc., and concludes this is a cow. (Cf. Vaiśeṣika texts for the example)

Sāmānyato dṛṣṭa is when one has observed that the reaching of another place is preceded by motion, by this one is able to establish the motion of the sun, etc.

(Example is in several texts; see under 3, above)

There is resemblance here to the *Māṭharavṛtti*, and to Śabarasvāmin; and like Vācaspatimiśra's, Kauṇḍinya's *pūrvavat* is clearly derived from the *Saṣṭitantra* VIŚEṢATO DṚṢṬA. The terminology, 'dṛṣṭam' paired with 'sāmānyato dṛṣṭam', looks like the Vaiśeṣika, and of the last two examples, one does occur in the *Vaiśeṣikasūtras*, the other in the *Nyāyabhāṣya*, which suggests that Kauṇḍinya borrowed from the Nyāya-Vaiśeṣika as well as from Sāṃkhya. He has distorted the *Ṣaṣṭitantra* arrangement also; both he and Vācaspati, like their master Vṛṣagaṇa before them, tried to preserve the three-fold inference within the confines of the two-fold.

5. Some early Buddhist texts:

(a) *Upāyahṛdaya* ('very ancient', perhaps contemporary with the *Carakasaṃhitā*: Tucci, *op. cit.*, pp. xi–xii, xxx; G. Tucci, 'Buddhist Logic

before Diṅnāga', *Journal of the Royal Asiatic Society* (1929), p. 452.) (from Tucci, *Pre-Diṅnāga Buddhist Texts...*, p. xi–xviii)

Pūrvavat: one sees a child with six fingers, then years later sees a man with that same characteristic, and infers that this man is the same as that boy. (On the example, cf. Kauṇḍinya.)

Śeṣavat: because one drop of sea-water tastes salty, one infers that the others are the same. (On the example, cf. *Māṭharavṛtti*; Gauḍapāda; *Yuktidīpikā* gives this as a case of *sāmānyato-dṛṣṭa*.)

Sāmānyato-dṛṣṭa: one knows that by moving one goes to another place; seeing the sun and moon in different places in the sky at different times, one infers they also move. (Example is in several texts; see under 3, above)

If this text is as early as Tucci supposes, it may antedate the *Ṣaṣṭitantra*. Here, too, *pūrvavat* resembles the latter's *viśeṣato-dṛṣṭa*. There is no strong evidence for a well-considered system of inference here; empirically based inference of a particular individual is combined with simple analogies.

(b) Ts'ing-mu (Mādhyamika commentator on the *Madhyamakakārikāḥ*, preserved only in Chinese; here on *MMK*.XVIII.1–12) ("pre-Diṇnāga": G. Tucci, *Pre-Diṅnāga Buddhist Texts...*) (from Tucci, *ibid.*, pp. xvii–xviii)

Pūrvavat: from previous experience one knows, wherever there is smoke there is fire; one sees smoke and knows that in this case also there must be fire.

Śeṣavat: one grain of rice is perceived to be cooked, therefore there is an inference that the rest are cooked. (This is a *sāmānyato-dṛṣṭa* to the *Yuktidīpikā*.)

Sāmānyato dṛṣṭa: (Tucci gives two examples) the inference of the movement of heavenly bodies (as in several works, above) -or, the inference of soul from pain, joy, etc. (a Nyāya-Vaiśeṣika proof)

PŪRVAVAT, once again, is like the *Ṣaṣṭitantra* VIŚEṢATO-DṚṢṬA, extended now to cover the *Ṣaṣṭitantra* SĀMĀNYATO-DṚṢṬA also. Ts'ing-mu's SĀMĀNYATO DṚṢṬA is inference of the unseen, using examples familiar from a number of other works. I am led more and more to assume that it was upon *pūrvavat* that much effort was expended in early texts to determine a firm ground for inference which would bridge the gap between direct empirical knowledge and subtler sorts of cognition.

Most of this endeavour surely post-dates Vṛṣagaṇa, and I am convinded it was inspired by the spread of his ideas.

(c) Vasubandhu (*ca.* 400–480 A.D.: E. Frauwallner, 'Vasubandhu's Vādavidhiḥ', *WZKSO* I (1957), p. 104. (from Frauwallner, *ibid.*, pp. 118–21).
Inference is the seeing of an invariably connected object, by someone who knows it. An object which does not appear unaccompanied by another, is necessarily connected with it, as smoke with fire. Through this, the unseen object is inferred.

To say 'by someone who knows it' implies that seeing the mark is followed necessarily by recollection of the connection (Frauwallner's comment).

The reason for knowing (*hetu*) is the communication of a characteristic which is invariably connected with what is to be proved; as, that which arises through effort is the *hetu* of non-eternality, and smoke of fire.

(d) Dignāga (ca. 480–540 A.D.: E. Frauwallner, 'Landmarks in the History of Indian Logic', *WZKSO* 5 (1961), p. 137. (from G.O.S. edition of the *Vaiśeṣikasūtras*, Appendix VII, p. 186; Sanskrit reconstruction of *Pramāṇasamuccaya* and *Vṛtti*: this is from Dignāga's critique of Vaiśeṣika inference, which is mostly occupied with the *sambandhāḥ* (connections); I wish only to present a brief comment by Dignāga relevant to my context, and no exposition of his logic)
The real relation of smoke and fire is, *this* place and time possess smoke and fire together, because the two have been frequently observed together in *such* a place and time previously. The mark, smoke, establishes only that *this place now* possesses fire.
(from H. Kitagawa, 'A Note on the Methodology in the Study of Indian Logic', in *A Study of Indian Classical Logic*, Tokyo 1965, esp. p. 387: The real relationship (in Indian logic) is that between *liṅga-liṅgin* (the mark and its possessor), *dharma-dharmin* (the characteristic and its possessor), and it is always and only one of *possession*, in a particular time and place.

These references to Vasubandhu and Dignāga are intended only to illustrate the level of sophistication the thought of these two was attaining on concomitance and the inferential mark. That they were proceeding intellectually over the ground already partially cleared by Vṛṣagaṇa is, I think, apparent. (Cf. E. Frauwallner, 'Die Erkenntnislehre des Klassischen

Samkhya-Systems', *WZKSO* 2 (1958), p. 137; and, 'Dignāga, sein Werk und seine Entwicklung', *WSKSO* 3 (1959), p. 83.

6. Some texts containing information on concomitance as well as comments on inference:

(a) *Yogacaryābhūmiśāstra* of Asaṅga (and/or Maitreyanātha) (*ca.* end of third/beginning of fourth century: G. Tucci, *On Some Aspects of the Doctrines of Maitreyanātha and Asaṅga*, Calcutta 1930, pp, 9–10.)

(from Tucci, 'Buddhist Logic...,' pp. 466–7, 475) Inference is the discrimination of an object through imagination (as opposed to perception, in which imagination does not intervene, and which is thus without error).

(Elsewhere Asaṅga says that inference is any conviction besides that derived from direct perception; as when one has once seen an object, and now sees only a part of it, one infers the other part.)

Inference is of five kinds (the five are also called 'aspects of a homogeneous example' in this text):

(1) *nimittānumāna*: is based on a relation between two things which is already known; as inference of fire from smoke.

(2) *svabhāvānumāna*: is inferring an unperceived existent from a present perceived existent; of knowing the unperceived part of something from a present perceived part; as knowing the past from the present, or a cart from its wheel.

(3) *karmānumāna*: is inference of the basis or support of an action from that action; as seeing an object from afar, one infers it is a tree if it remains stationary, or a man if it moves.

(4) *dharmānumāna*: is inference of one condition of being (*dharma*) from perceiving others, knowing all these *dharmas* are interrelated; as from birth one infers death.

(5) *kāryakāraṇānumāna*: is inference of notions which are related as cause and effect.

The first two together cover the same ground as general definitions of inference from the circle of the *Ṣaṣṭitantra*. *Svabhāvānumāna* bears some obvious similarity to the *Vaiśeṣikasūtra*'s VIRODHA (contrariety) relation, also, as the chosen expressions, 'perceived' or 'unperceived existent', and the condition of knowing the past from the present, reveal; knowing a cart from its wheel would be called inherence, however, by the

Vaiśeṣika. *Karmānumāna* would be a relation of inherence also to the Vaiśeṣika (cf. Candrānanda on *VS*.VII.2.29). *Dharmānumāna* is specifically Buddhist, despite its superficial resemblance to *ekārthasamavāya* (co-inherence), or perhaps to the *Ṣaṣṭitantra*'s 'concurrent occurrence'. *Kāryakāraṇānumāna* is expressed peculiarly, as inference of a *notion* or *concept*; that sounds most like Dharmakītri. Asaṅga seems here to want to generalize beyond merely empirical relations.

These are called by Asaṅga five kinds of *inference*, however, and he no doubt intended them so. He seems to mean to develop a real theory of inference based on known relations between things; but rather than concisely systematizing how inference occurs, he uses these five also to express different kinds of relationships. It is possible to trace similarities with the connections (*sambandhāḥ*) of *Ṣaṣṭitantra* and *Vaiśeṣikasūtras*, but I do not imagine any direct influences here, just parallel and perhaps even contemporary investigation. It is interesting that others besides Vṛṣagaṇa and Kaṇāda were making such speculations in that period.

Further on, Asaṅga says the *sādhya* (what is to be proved) can be either the existence or non-existence of something, or the predicate or quality of something; the latter is a relation of possession. Here, too, Dharmakīrti comes to mind, and also the 'one and only' possible logical relation attributed to Dignāga, above, that of possession.

(b) *Anuyogadvāra* of the Śvetāmbara Jainas ('very old': Dhruva, 'Trividham Anumānam', p. 258)

(from Dhruva, *ibid.*, pp. 258–9)

Inference is three-fold:

(1) *puvvava*: inference from marks formerly observed; as a child's scar seen later on an adult (example is also in *Upāyahṛdaya* and Kauṇḍinya)

(2) *sesava*: inference from the other; it is of five kinds:

(a) *kajjeṇam*: inference of cause from effect; as a peacock from its cry.

(b) *kāraṇeṇam*: inference of effect from its cause; as cloth from the observance of threads. (The commentary adds that, given *all* the causes, the effect must follow: as, from the rising of the moon, the tide must follow.)

(c) *guṇeṇam*: inference of a substance from its attribute; as, salt from its taste.

(d) *avayaveṇam*: inference of the whole from its parts; as, the elephant from its trunk.

(e) *āsayenam*: inference of the abode from what abides therein; as fire from smoke, water from cranes, or a shower of rain from turbid waters.

(3) *diṭṭhasāhammava*: inference from similar cases; it is of two kinds:

(a) *sāmannadiṭṭha*: inference from what is observed as a point common to all individuals; as, as one man is, so are many, and as many men are, so is one.

(b) *visesadiṭṭha*: inference from observed distinguishing trait of a certain individual amidst a group; as, one's friend in a crowd.

This text contains a little of everything, including the terms for the standard three-fold inference, the *Ṣaṣṭitantra* two-fold and a theory of relationships. *Puvvava* stands nearer the real *Ṣaṣṭitantra* VIŚEṢATO-DṚṢṬA however than does the *viśeṣato-dṛṣṭa* given here, especially classified as it is under 'seeing from similar cases'. *Sesava* is really a theory of connections with a catalogue of real relations subjoined. All of them would be causal relations to the Vaiśeṣika, and the preponderance of causation in all texts which gave much thought to the matter is no surpise. The last example given for *āsayenam*, inference of rain from turbid waters, is interestingly placed, since it would be cause inferred from its effect to other writers; the three illustrations collected here make odd companions. In this text, the famous peacock example of the *Nyāyasūtras* does appear, and is called, outright, knowledge of cause from its effect.

The parallels with the *Vaiśeṣikasūtras* are self-evident and do not need to be belaboured. Without being able to postulate a date for the text, I can make only limited use of it for comparison.

(c) *Yuktidīpikā* (on *Sāṃkhyakārikā* 6; p. 40

From that inference which is seeing from the general, there is clear perception of supersensible things... Because concomitance has been previously observed, for

- being produced and being non-eternal; as the jar is, so is sound;
- things having parts, etc; as sandalwood (tree?);
- the cause and effect; as pleasure, etc.
- dependence of one thing on another from being in close union;
- the cause and effect because of the dependence of one on the other from being in close union.

I think these relations are a vague shadow of the *Ṣaṣṭitantra* connections (*sambandhāḥ*); having parts, cause and effect, and close union are also in

the *Ṣaṣṭitantra*. The relations are here placed under *sāmānyato-dṛṣṭa*, as they were by Candramati, even though cause-effect serves also to define *pūrvavat* and *śeṣavat* specifically.

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NOTES

[1] 'Die Erkenntnislehre des klassischen Sāṃkhya-Systems', *Wiener Zeitschrift für die Kunde Sud- und Ost-Asiens* **2** (1958), pp. 84–139. It is Frauwallner's suggestion that the Vaiśeṣika inference theories should be examined in the light of Sāṃkhya epistemology that I am here pursuing (see also his 'Candramati und sein Daśapadārthaśāstra', in *Studia Indologica, Festschrift für Willibald Kirfel,* Bonn, 1955: Bonner Orientalistische Studien, N.S.3; pp. 65–85). It was also he who recognized that the *Nyāyabhāṣya* reproduces *Sāṃkhya* theories: 'Candramati...', p. 77, note 24.
[2] 'Erkenntnislehre...', p. 84.
[3] Frauwallner in his *Geschichte der indischen Philosophie,* Salzburg 1953 and 1956, traces such mutual influences, as: the Sāṃkhya's borrowing part of its psychology from the Vaiśeṣika, as well as the categories and the atomic theory; etc. – I, p. 340ff., 399, 403–7; and the Vaiśeṣika's dependence on Sāṃkhya doctrines of ether as the bearer of sound; of the infinitely large soul; etc. – II, pp. 32–3, 96–8.
[4] Frauwallner, 'Erkenntnislehre...', p. 131. Dignāga testifies to the significance of the *Ṣaṣṭitantra* theory of knowledge among his contemporaries by devoting a preponderance of space to a refutation of it: 25 verses, as opposed to about 12 each against Vasubandhu, the Nyāya and Vaiśeṣika, and 18 against the Mīmāṃsā; p. 85, note 3. Dignāga's, and the other works used by Frauwallner, have given a number of literal quotations from the *Ṣaṣṭitantra,* which, when properly arranged, constitute a continuous discourse. Siṃhasūri has named his source on p. 324, line 11, of the Jain Atmanand Sabha edition, Muni Jambuvijaya (editor): see Frauwallner, *ibid.,* p. 94.
[5] *VS.*IX.18: *asyedam kāryaṃ kāraṇaṃ sambandhi ekārthasamavāyi virodhi ceti laiṅgikam*: "This is the effect (of that), the cause (of that), the conjunct (of that), that which co-inheres in the same thing (as that, or) the contrary of that – such is cognition of an entity produced by perceiving a mark." X.4: *tayor niṣpattiḥ pratyakṣalaiṅgikābhyāṃ jnānābhyāṃ vyākhyātā*: "The production of these two (= doubt and certainty) is explained by means of (two ways of knowing:) direct perception and cognition of an entity produced by perceiving a mark." X.19: *laiṅgikaṃ pramāṇaṃ vyākhyātam*: "Thus is explained the means of cognition (which is) cognition of an entity produced by perceiving a mark. ('*Laiṅgikaṃ*' may also be conveniently translated as 'inference'.) This is the numbering of the Gaekwad's Oriental Series edition, no. 136: *Vaiśeṣikasūtram of Kaṇāda, with the commentary of Candrānanda* (ed. by Muni Śrī Jambuvijayaji, with an Introduction by A. Thakur), Baroda1961.
[6] For example, in I.2.18; II.8–10, 15, 20, 26; III.2.4. 6; IX.20.
[7] II.1.8: *viṣāṇī kakudmān prāntevāladhiḥ sāsnāvāniti gotve dṛṣṭaṃ liṅgam*: "(It) has horns, a hump, a tail hairy at the extremity (and) a dewlap – such is the perceived mark of cow-ness."
[8] II.1.9–10: *sparśaś ca/ na ca dṛṣṭānāṃ sparśa ityadṛṣṭaliṅgo vāyuḥ*: "And tangibility

(is the mark of wind)/ And tangibility is not the mark of things (which are) perceived – therefore it is the unperceived mark (with respect) to wind." – This expression which I translate as 'unperceived mark' as contrasted with 'perceived mark' is a technical term; it does not mean that the mark itself has not been perceived, but that its connection with its possessor has not been.

[9] II.1.16 and III.2.7, which are identical: *sāmānyato dṛṣṭāc cāviśeṣaḥ*: "And from seeing from the general, no particular (entity can be known)." Candrānanda makes a further reference to 'seeing from the general' in his comment to IX.8; he does accept the technique as valid – in this case, as a means of knowing the negative of something existent, as *aghaṭo 'gaur adharmaś ca*: "the negative of jar, of cow, and of merit."

[10] II.1.25–26: *paratra samavāyāt pratyakṣatvāc ca nātmaguṇo na manoguṇaḥ/ liṅgam ākāśasya*: "Because of (its) inherence in something else and because of its perceptibility (it is an attribute, not a substance, but) it is neither an attribute of soul nor of mind/ It is the mark of physical space." Cf. also Candrānanda's commentary.

[11] II.1.15–17: *vāyur iti sati sannikarṣe pratyakṣābhāvād dṛṣṭaṃ liṅgaṃ na vidyate/ sāmānyato dṛṣṭāc cāviśeṣaḥ/ tasmād āgamikam*: "As for wind – because of the absence of perception in the case of the actual connection (of wind with its mark), there is no perceived mark (of wind)/ And from seeing from the general no particular (entity) can be known/ Therefore (one must) appeal to scripture."

[12] III.2.4: *prāṇāpānanimeṣonmeṣajīvanamanogatīndriyāntaravikārāḥ sukhaduḥkhe icchādveṣau prayatnaś cetyātmaliṅgāni*: "Inhaling, exhaling, closing the eyes, opening the eyes, life, the movements of the mind (and) alterations in the other senses, pleasure and pain, desire and aversion, and volition – these are the marks of the soul." – III.2.6–14: *yajñadatta iti sati sannikarṣe pratyakṣābhāvād dṛṣṭaṃ liṅgaṃ na vidyate/ sāmānyato dṛṣṭāc cāviśeṣaḥ/ tasmād āgamikam/ aham iti śabdavyatirekān nāgamikam/ yadi ca dṛṣṭapratyakṣo 'haṃ devadatto 'ham yajñadatta iti/ devadatto gacchati viṣṇumitro gacchatīti copacārāc charīrapratyakṣaḥ/ sandigdhas tūpacāraḥ/ aham iti pratyagātmani bhāvāt paratrābhāvād arthāntarapratyakṣaḥ/ na tu śarīraviśeṣād yajñadattaviṣṇumitrayor jñānaviśeṣaḥ*: As for (a person such as) Yajñadatta – because of the absence of perception in the case of the actual connection (of the above marks with Yajñadatta), there is no perceived mark/ And from seeing from the general, no particular (entity) can be known/ Therefore (one must appeal to) scripture/ But the proof (of the soul) is not (just from the appeal to) scripture, because of the restricted use of the word 'I'/ (The opponent says: That would be the case) if (the assertion) 'I am Devadatta, I am Yajñadatta' were (equivalent to) experienced direct perception (of the soul)/ But when (one says) 'Devadatta goes, Viṣṇumitra goes', because of the application (of that expression to Devadatta's and Viṣṇumitra's bodies), there is perception (only) of the body (; therefore the use of the word 'I' is restricted to the body)/ (Kaṇāda says:) But the application (of the word 'I' to the body) is doubtful/ As for (the word) 'I' – because of the awareness (of the notion) within oneself, because this awareness does not exist elsewhere, there is perception of the 'something quite different' (which is one's own soul)/ There is (therefore) particularity of knowledge of Yajñadatta and Viṣṇumitra, but not because of the particularity of (their) bodies."

[13] III.1.8: *saṃyogi, samavāyi, ekārthasamavāyi, virodhi ca/ kāryaṃ kāryāntarasya, kāraṇaṃ kāraṇāntarasya/ virodhy abhūtaṃ bhūtasya, bhūtam abhūtasya, abhūtam abhūtasya, bhūtaṃ bhūtasya*: "(That which is) a conjunct (of something else), that which is inherent (in something else), that which is co-inherent (with something in something distinct from both), and (that which is) the contrary (of something else) is a valid mark/ An effect can be (the mark) of another effect, a cause can be (the mark) of

another cause/ The non-existence of the contrary can be (the mark) of something which exists, the existence (of the contrary) can be (the mark) of (something) which does not exist, the non-existence (of the contrary) can be (the mark) of (something else) which does not exist, (and) the existence (of the contrary) can be (the mark) of (something else) which exists." – IX.18: *asyedaṃ kāryaṃ kāraṇaṃ sambandhi ekārthasamavāyi virodhi ceti laiṅgikam*: "This is the effect (of that), the cause (of that), the conjunct (of that), that which co-inheres in the same thing (as that, or) the contrary of that – such is cognition of an entity produced by perceiving a mark." – 'Inherent' of III.1.8 would be the equivalent of 'cause and effect' in IX.18, as Candrānanda explains in his comment to the latter. Inherence is the primary sort of causation taught by the *Vaiśeṣikasūtras* – see, for example, X.12, and also 13–7.

[14] Candrānanda on III.1.8 does use the word '*liṅgam*' (mark) when defining the four-fold *virodhi* relation (the relation of contraries).

[15] Candrānanda explains the relations by means of examples, which are repeated with minor variations in the *Viśālāmalavatī Ṭīkā* of Jinendrabuddhi, p. 189, lines 4–12, Appendix VII of the G.O.S. edition of the *Vaiśeṣikasūtras* (Sanskrit reconstruction from the Tibetan), and in the *Sarvasiddhāntapraveśakaḥ*, p. 145, lines 1–12, Appendix V. On III.1.8: *saṃyogi* (conjunct) is as the relation of smoke to fire, *samavāyi* (inherent) as horn to cow; *ekārthasamavāyi* (co-inherent) in the case of the relation of an effect to another effect is as form (*rūpa*) to touch (*sparśa*), in the case of cause to cause it is as hand to foot. *Virodhi* (contrary) is four-fold, as the non-existent storm is mark of the existent conjunction of wind and clouds; the existent storm is the mark of the non-existent conjunction of wind and clouds; the non-existent dark color (of the clay jug) is the mark of its non-existent conjunction with fire; the existent effect is the mark of the existent cause.

[16] IX.16–17: attributes can be known because they inhere in substances; the *ātmaguṇāḥ* (attributes of soul) are known because of their inherence in soul (*ātman*). As already mentioned, Candrānanda describes the relation of inhaling and the other physical actions of conditions to the soul as one of efficient causation: but this relation is not mentioned by Kaṇāda. Candrānanda also mentions at the end of his comment on III.1.8 that the sense organs either inhere in the soul or are related to it as instruments to agent.

[17] Praśastapāda (a later writer of the Vaiśeṣika school) of course insists that these four are only a selection of certain real relations and are not meant to exhaust the number of empirically verifiable cases of invariable concomitance: *Padārthadharmasaṃgraha* (Benares1895: *Vizianagram Sanskrit Series* 4) p. 462. To the concept of causation, the *Vaiśeṣikasūtras* return repeatedly – as in much of I.1; I.2.1–2; IV.1.1–3; etc.; and in X.5–18, with particular reference to cognition of cause and effect.

[18] III.1.9–11: *prasiddhapūrvakatvād apadeśasya/ aprasiddho 'napadeśaḥ/ asan sandigdhaś cānapadeśaḥ*:"Because of the previous establishment of the valid mark,/ the invalid mark is not established/ And the invalid mark is what is non-existent or doubtful."

[19] Candrānanda on III.1.9–10, p. 26, lines 14–19: *prasiddho yaḥ saṃyogyādir nāsambaddho yena saha jñātaḥ sa tasyārthāntarasyāpi liṅgaṃ sambaddhatvāt, nāsambaddham/ ... aprasiddho viruddhaḥ, yasya sādhyadharmeṇa saha naivāsti sambandhaḥ, api tu viparyayeṇa, asāv anapadeśo 'hetuḥ*: "What is established is (just) the conjunct, etc., not (what is) unconnected (with what is to be inferred), the entity is known by means of that (conjunct, etc.), that (conjunct, etc.) is the mark also of that other thing (which is connected with it) because of the (known) connection (of the two), the unconnected is not (the mark)/ ... That (which is) not established is (quite) the opposite (case), the

connection of which is indeed not with that thing which is to be proven, but rather with something (quite) opposed (to what is to be proven); that invalid mark (therefore) is not the reason (for correct cognition)." – In this passage, and especially on *Sūtras* 11 and 12, Candrānanda reads like Praśastapāda, attributing to Kaṇāda a negative formulation of the *trirūpahetu* (the inferential mark which meets the three conditions for validity). I feel, despite the intrusion of such post-Dignāga notions, that his basic interpretation of 9 and 10 is convincing and I am prepared to accept it.

[20] IX.1–7.

[21] IX.6: *asad iti bhūtapratyakṣābhāvād bhūtasmṛter virodhipratyakṣatvāc ca jñānam.*

[22] To anticipate a later conclusion, I must mention here that within the context of the relationship of contraries (*virodhi*) which occurs between entities existent or non-existent, appears much of what is normally included in Nyāya and other works under the general heading 'inference'. I suspect that the *virodhi* relationship, which covers also knowing from the present to the past and the future, might be itself the remnant of a more archaic Vaiśeṣika theory of inference. The formulation of contrariety (*virodha*) in IX.6 would then be a modernized explanation of an older way of thinking.

[23] Frauwallner, 'Erkenntnislehre...', pp. 123, 126: *sambandhād ekasmāt pratyakṣāc cheṣasiddhir anumānam.* Those portions of the *Ṣaṣṭitantra* which have survived in Sanskrit are quoted, after Frauwallner, in that language. The rest are given in Tibetan only, but the Tibetan for the seven relations is accompanied by Frauwallner's Sanskrit equivalents.

[24] *Ibid.*, pp. 123, 126–7 for the connections (*sambandhāḥ*). A pair of examples is given for each *sambandha*, one with general relevance, the other peculiar to the *Sāṃkhya*.

[25] *Ibid.*, pp. 124 and 127.

[26] *Ibid.*, pp. 124, 128.

[27] The reconstruction of the whole of the retrieved section of the *Ṣaṣṭitantra* dealing with means of knowledge is on pp. 123–6 of Frauwallner's article, and his translation follows on pp. 126–30.

[28] Frauwallner, *Geschichte*...I, pp. 384–5.

[29] See also Frauwallner, 'Erkenntnislehre...', pp. 135–7.

[30] *VS*.VIII.12–3, and commentary.

[31] Book X contains a number of *sūtras* on the cognition of cause and effect, in past, present and future, X.5–18; 10–1 are on knowledge of them by means of their co-inherence with one another. Book X seems to me also, therefore, to supply evidence of the connection of Kaṇāda's theory of relations with older ideas of inferential knowledge in the three points of time. I will return to this problem later.

[32] G. Oberhammer, 'Zur Deutung von Nyāyasūtram I.1.5', *WZKSO* **10** (1966), pp. 71–2, claims that the Ṣaṣṭitantra borrowed the terms *pūrvavat* and *śeṣavat* from the *Nyāyasūtras*, and that they have no real significance in the Sāṃkhya text. They were certainly not invented by Vṛṣagaṇa, but if he borrowed them directly from the *Nyāyasūtras*, he reversed the meaning of the two.

[33] Supersensible entities in the Indian philosophical systems are very often 'known' as causes – as the Unseen (*adṛṣṭa*) in the Nyāya-Vaiśeṣika, and also the Lord (*īśvara*): they function and are required within the system as primary causes, to explain something otherwise found inexplicable. Naturally, then, a causal relation is the one among any multiplicity of possible relationships which is applicable.

[34] In *VS*.III.1.11, however, he denies that either the non-existent or the doubtful can be a valid mark. This contradicts III.1.8 and much of Books IX and X.

[35] *VS*.IX.8: *etenāghaṭo 'gauradharmaś ca vyākhyātaḥ*: "By this is explained also the

non-pot, the non-cow and non-merit..." Commentary, p. 47, lines 15–16: *tathā sāmānyato darśanād rātrisnānāder dharmatve sambhāvite 'adharmaḥ' ity upapadyata iti*: "Therefore, because of 'seeing from the general', if the meritoriousness of night ablutions, etc., is grasped, the (concept) 'non-merit' is (also) produced."

[36] *VS*.II.2.19: *sāmānyapratyakṣād viśeṣāpratyakṣād viśeṣasmṛteś ca saṃśayaḥ*: "Doubt (arises) from seeing a generality (that is, something not clear in its particulars), from not seeing something particularized, and from recalling a particular (entity)." – The *Yuktidīpikā*, a Sāṃkhya work, cites the objection of an opponent who has declared that the so-called non-deviation observed between two entities is not specific enough to permit inference. This is refuted by asserting that when entities appear together, the observation of the particularized attribute of the one makes possible the inference of a similar particular state for the other, and this is a case of *sāmānyato-dṛṣṭa*, seeing from the general – pp. 38–9 (*Yuktidīpikā*, Commentary on the *Sāṃkhya-Kārikā* of Īśvarakṛṣṇa (ed. by Ram Chandra Pandeya) Delhi 1967). I suppose that the opponent here is a Vaiśeṣika, perhaps even the Sūtra-writer himself.

[37] *Nyāyasūtram of Gautama, with Vātsyāyana*'s *Nyāyabhāṣyam*, etc., (ed. by Gaṅgānātha Jhā), *Poona Oriental Series* (**58** 1939).

[38] *NS*.I.1.10: *icchādveṣaprayatnasukhaduḥkhajñānānyātmano liṅgam iti*: Desire, aversion, volition, pleasure, pain and knowledge are the mark of the soul.

[39] Oberhammer's article, *op. cit.*, on *NS*.I.1.5, is especially enlightening. B. K. Matilal also discussed this problem in a paper (unpublished). I wish also to acknowledge here the debt I owe to Dr Matilal who first brought to my attention this problem in the interpretation of the *Nyāyasūtras*. See note 45.

[39a] The Nyāya definitions of these terms will be discussed below, and appropriate translations will be given in the course of the discussion.

[40] *NS*.I.1.5: *atha tatpūrvakam trividhamanumānam pūrvavaccheṣavatsāmānyatodṛṣṭam ca*. II.1.38–9: *rodhopaghātasādṛṣyebhyo vyabhicārād anumānam apramāṇam/ na, ekadeśatrāsasādṛśyebhyo 'rthāntarabhāvāt.*

[41] *Nyāyasūtras of Gautama, with Vātsyāyana Bhāṣya*, translated by Gaṅgānātha Jhā, Poona 1939 (*Poona Oriental Series* **59**), p. 165.

[42] These examples, which Gautama himself does not elucidate, are given also by Jinendrabuddhi, *Viśālāmalavatī Ṭīkā*, G.O.S. edition of the *Vaiśeṣikasūtras*, App. VII, p. 218: and the *Yuktidīpikā* contains a very detailed explanation of how one observes that the fullness of the river is due to rain and not to an obstruction, p. 38.

[43] Since I shall be returning later to a consideration of the contents of the *Nyāyabhāṣya* itself, I shall not now go into the second set of definitions for the three-fold inference which Vātsyāyana offers there.

[44] Oberhammer, *op. cit.*, pp. 67–9. Also Matilal (see note 45 below).

[45] On *sāmānyatodṛṣṭa* I am not in complete agreement with Oberhammer, who feels that Gautama meant that term to refer to inference in general, since every inference, as Gautama knew it, would be reasoning by analogy, which is really recognizing something from seeing in general. This he concludes from remarking the use of the word '*sadṛśam*' (which usually means 'similar') in the *Carakasaṃhitā*, where that word has the value of '*sāmānyataḥ*', ('in general'), and is used of an inference to a future event: *ibid.*, pp. 70–1. Since the expression seems to be used of more than one kind of inference, Oberhammer deduces that it is meant to apply to all. This may be so in the *Carakasaṃhitā*, but does not seem to me conclusive for the *Sūtras*. I think the question is definitely one of inferring in the three points of time.

A. B. Dhruva, '*Trividham Anumānam* or a Study in Nyāyasūtra I.1.5', *Proceedings*

and Transactions of the First Oriental Conference, Poona, Vol.I, 1920, pp. 261–3, is of the opinion that the terms *pūrva*, *śeṣa* and *sāmānya* were borrowed by the Nyāya school from the Mīmāṃsā, where the words are commonly used in grammar: *pūrva* means the logically prior part of a sentence, etc., or principal part; *śeṣa* is the logically posterior part of a sentence, etc., or the 'remainder' which is subsidiary to the principal part; *sāmānya* is likeness, or participation in a common class, and is used in the Mīmāṃsā as basis of an argument from parallel instances. If that is the source of this interesting terminology, *pūrvavat* and *śeṣavat* certainly should more readily refer to past and future than to cause and effect. Neither *sāmānya* nor *sāmānyatodṛṣṭa* do refer directly to present time, of course, but do connote 'similarity', and I do admit that the terminology presents a difficulty. Yet I still cannot agree with Oberhammer that the *Nyāyasūtras' 'sāmānyatodṛṣṭam'* is, in effect, a definition of inference and is not intended merely to represent the third point of time; I think it is meant to be similarity of something only partially perceived to something perceived or known entirely, in the present moment. I think, at any rate, that Gautama's understanding of '*trividham anumānam*' as '*trikālam*' (three-fold inference as 'three times') is reasonably clear, but that there is ambiguity in the use of the technical terms.

B. K. Matilal made almost a similar point in a paper 'On the Interpretation of *Nyāyasūtras* 1.1.5 and 2.1.37–38', read at the XXVII International Congress of Orientalists (Ann Arbor, Michigan 1967).

46 Oberhammer, *op. cit.*, p. 67: *pratyakṣapūrvaṃ trividhaṃ trikālaṃ cānumīyate/ vahnir nigūḍho dhūmena, maithunaṃ garbhadarśanāt// evam vyavasyanty atītam bījāt phalam anāgatam/ dṛṣṭvā bījāt phalaṃ jātam ihaiva sadṛṣam buddhāḥ//* – "And one can infer in three ways, with respect to the three points of time, (so long as inference is) preceded by perception/ (1) A hidden fire (is inferred) by means of smoke; (2) in just this way, the knowledgeable ascertain past sexual union from seeing the offspring; (3) and similarly (they ascertain a case of) the future fruit (proceeding) from the seed after having perceived (already) that fruit is produced from the seed (in other cases)."

47 Aśvaghoṣa, *Saundarananda Kāvya* (ed. by Haraprasad Shastri), re-issue with additions by C. Chakravarti, Calcutta 1939 (Bibliotheca Indica, 192); translation by E. H. Johnston, *The Saundarananda*, London 1932 (*Panjab University Oriental Publications* **14**). *pratyakṣam ālokya ca janmaduḥkhaṃ duḥkhaṃ tathātītam apīti viddhiḥ/ yathā ca tadduḥkham idañ ca duḥkhaṃ duḥkhaṃ tathā nāgatam apy athaihi// bījakhabhāvo hi yatheha dṛṣṭo bhūtopi bhavyopi tathānumeyah/ pratyakṣataś ca jvalano yathoṣṇo bhūto 'pi bhavyopi tathoṣṇa eva// tannāmarūpasya guṇānurūpaṃ yatraiva nirvṛttir udāravṛtta/ tatraiva duḥkhaṃ na hi tadvimuktaṃ duḥkhaṃ bhaviṣyaty abhavad bhabed vā//* Canto XVI, 14–6.

48 Such knowledge is required explicitly by the *Carakasaṃhitā* only for seed-fruit.

49 The *Anuyogadvāra* of the Śvetāmbara Jains, which Dhruva believes to be an ancient work, makes reference in passing to inference being three-fold as it relates to past, present and future; Dhruva, *op. cit.*, p. 260. And Dignāga, while refuting the Nyāya school, denies that a *trikāla* division of inference has any meaning since every object of cognition can exist in all three points of time and every inference can refer to any of these; *Pramāṇasamuccaya* and *Vṛtti*, G.O.S. edition of *Vaiśeṣikasūtras*, App. VII, p. 217.

50 *NS*.I.1.34–5: *udāharaṇasādharmyāt sādhyasādhanam hetuḥ// tathā vaidharmyāt*: "The reason (for knowing) is (that which brings about) the establishment of that which is to be proved, because of its similarity with the example// So, too, because of its difference."

[51] *Nyāyabhāṣya*, p. 19: *sadviṣayaṃ ca pratyakṣaṃ sadasadviṣayaṃ cānumānam/ kasmāt? traikālyagrahaṇāt/ trikālayuktā arthā anumānena gṛhyante – bhaviṣyatītyanumīyate bhavatīti cābhūditi ca/ asac ca khalv atītam anāgataṃ ceti*: "And the (presently) existent sense object is known by perception, and the existent or non-existent sense object is known by inference/ Why? – Because of being grasped in three points of time/ Objects bound to the three points of time are grasped by means of inference – 'It shall be' is inferred, 'It is' and 'It was', and the non-existent, therefore, is that which existed in the past and that which shall exist in the future."
[52] The *Vigrahavyāvartanī* of Nāgārjuna, with the Author's Commentary (ed. by and with an Introduction by E. H. Johnston and A. Kunst), *Mélanges Chinoises et Bouddhiques* IX (1948–51), p. 106; G. Tucci, *Pre-Diṅnāga Buddhist Texts on Logic from Chinese Sources*, Baroda 1929 (*Gaekwad's Oriental Series* 49), p. xxvii.
[53] *NS*.II.1.41, and *Bhāṣya*, pp. 108–9.
[54] Tucci, *op. cit.*, pp. 72–4 of the translation of the *Vigrahavyāvartanī*. Here knowledge in the three times is unmistakably connected with causation, but the point of the argument is knowledge in relation to time, which can, it is true, be most conveniently dealt with as cause and effect.
[55] T. R. V. Murti, *The Central Philosophy of Buddhism*, London 1960², p. 199; see *Mādhyamika-Kārikās* of Nāgārjuna (ed. by L. de la Vallée Poussin), Bibliotheca Buddhica IV: verses 1–4 of Book XIX; Āryadeva, *Catuḥśataka*, XI.1 (P. L. Vaidya, *Études sur Āryadeva et son Catuḥśataka*, Paris 1923, p. 142); and also XV. 353ff. (Vaidya, pp. 160–3), where production in time and cause and effect are refuted.
[56] *Nyāyabhaṣya*. to I.1.5, p. 16: *tatpūrvakam ity anena liṅgaliṅginoḥ sambandhadarśanaṃ liṅgadarśanañ cābhisambadhyate/ liṅgaliṅginoḥ sambaddhayor darśanena liṅgasmṛtir abhisambadhyate/ smṛtyā liṅgadarśanena cāpratyakṣo 'rtho 'numīyate*: "'Preceded by that' – by this (phrase the fact of) having seen the connection (in the past) of the mark with its possessor, and the seeing of the mark (alone, later) is referred to/ Through having (already) seen the connected mark and possessor of the mark, the recollection of the mark (as connected with its possessor) is referred to/ Through (this) recollection and through seeing the mark, the unperceived object (= possessor of the mark) is inferred." – Vātsyāyana conspicuously uses the technical term preferred in the *Vaiśeṣikasūtras*, '*liṅga*' (mark), together with its correlate, '*liṅgin*' (possessor of the mark). Later, when discussing *arthāpatti* (implication), which he regards as a part of inference, Vātsyāyana repeats a similar definition which further underlines the idea of the connection: in the case of inference, certain knowledge is produced of the unperceived connected entity by means of the perceived – this is almost literally what Vṛṣagaṇa has said; and then Vātsyāyana continues: because two entities are *invariably connected* with one another, comprehension of the one arises by means of its known combination with the other. On *NS*.II.2.2, p. 127: *pratyakṣeṇāpratyakṣasya sambaddhasya pratipattir anumānam/ tathā cārthāpattisambhavābhāvāḥ/...avinābhāvavṛttyā ca sambaddhayoḥ samudāyasamudāyinoḥ samudāyenetarasya grahaṇaṃ sambhavaḥ, tad apy anumānam eva*: "Inference is certain knowledge of the unperceived connected (entity, which is attained) through the perception (of what is connected with it)/ And thus, (indirect knowledge by means of) implication is not distinct (from inference)/... And because of being invariably concomitant (with one another), the grasping of one of a pair of (such) connected entities by means of (their known) connection, arises; this, also, is inference."
[57] Frauwallner, 'Erkenntnislehre...', pp. 123, 126. In his article on Candramati, p. 77, n. 24, Frauwallner notes the influence of the *Ṣaṣṭitantra* on Vātsyāyana.

[58] *Yuktidīpikā*, p. 39: *yadā tarhi kvacid dharmeṇa dharmāntarasyāvyabhicāramupalabhyaikadharmopalambhādbhinnajātīye 'tyantānupalabdhasya dharmāntarasya pratipattis tadā sāmānyatodṛṣṭam*: "When, then, at some time, having observed the invariable connection of one entity with another, from observing one (such) entity (only), which is of another class, one had certain knowledge of that other entity which is absolutely unperceived – that, then, is 'seeing from the general'." – This commentary on the *Sāṃkhyakārikās* is dated by Frauwallner to about 550 A.D.: see *Geschichte* I, p. 287.
[59] (The *Yuktidīpikā* definition above is very much like this *sāmānyato-dṛṣṭa*.) *Nyāyabhaṣya*, pp. 17–8: *atha vā pūrvavad iti yatra yathāpūrvaṃ pratyakṣabhūtayor anyataradarśanenānyatarasyāpratyakṣasyānumānaṃ yathā dhūmenāgnir iti/ śeṣavan nāma pariśeṣaḥ/ sa ca prasaktapratiṣedhe 'nyatrāprasaṅgāc chiṣyamāṇe saṃpratyayaḥ – yathā sad anityam evamādinā dravyaguṇakarmaṇām aviśeṣeṇa sāmānyaviśeṣasamavāyebhyo vibhaktasya śabdasya tasmin dravyakarmaguṇasaṃśaye – na dravyam ekadravyatvāt, na karma śabdāntarahetutvāt – yastu śiṣyate so 'yam iti śabdasya guṇatvapratipattiḥ – sāmānyato dṛṣṭam nāma – yatrāpratyakṣe liṅgaliṅginoḥ sambandhe kenacid arthena liṅgasya sāmānyād apratyakṣo liṅgī gamyate/ yathecchādibhir ātmā/ icchādayo guṇāḥ, guṇāś ca dravyasaṃsthānāḥ, tad yad eṣāṃ sthānaṃ sa ātmeti*: "Or, 'pūrvavat' (can be such a case): (It is) inference of the unperceived member of a pair by means of seeing the other, when there has been previous perception (of the connection of the two), as, 'Fire (is inferred) through (the perception of) smoke'/ 'Śeṣavat' (can also be) the remainder/ And it is the firm conviction concerning what remains, because there is no other possibility when there has been exclusion of (all) connected (things). – As, in 'Something exists, (and) is non-eternal', because no distinction is made (in such a statement) among substances, attributes and actions, (and) since the entity is neither generality, particularity nor inherence, if there is doubt concerning the (identification of) sound as substance, action or attribute one may reason (in the following manner): It is not a substance because it is of one substance only; it is not an action because it can cause another sound – so, what remains is this, (and) there is certain knowledge that sound is an attribute/ – '*Sāmānyato dṛṣṭa*' is when the connection of the mark with its possessor is not perceived, but because of the similarity of the mark with some other thing, the unperceived possessor of the mark is known/ As, in 'By means of desire, etc., the soul (is known)'/ Desire and the rest are attributes, and attributes have a substance as their abode; the soul is the abode of these (attributes)."
[60] See Part I, A, above.
[61] *Yuktidīpikā*, p. 31: *anumānam dvayor avinābhāvinor ekaṃ pratyakṣeṇa pramāya tatpūrvakaṃ sambandhyantare yat paścānmānaṃ bhavati*: "When one of a pair (of entities) which are invariably connected has been correctly cognized previously by means of perception, inference is the (correct) notion which occurs later in the case of the other connected (entity)."
[62] *Ibid.*, p. 38: *sāmānyatodṛṣṭaṃ nāma yatraikadā 'rthayoravyabhicāram upalabhya deśāntare kālāntare ca tajjātīyayor avyabhicāraṃ pratipadyate/ tad yathā kvacid dhūmāgnisambandhaṃ dṛṣṭvā kvacid dhūmāntareṇāgnyantarasyāstitvaṃ pratipadyate*: " 'Seeing from the general' is (a case) where at some time the invariable connection of two entities having been (already) observed, in another place and at another time the invariable connection of two (entities) belonging to (just) the same class is known/ As, when one has seen somewhere the connection of smoke with fire, the existence of another fire is known by means of another (sighting of) smoke at some other time."
[63] *Trividham anumānam*. the three kinds of inference, are explained on pp. 38–40 of the *Yuktidīpikā*.

[64] It remains a mystery to me why the *Sāṃkhyakārikā* should have repeated the 'three-fold' dogma, unless their author had absorbed a powerful influence from the Nyāya, for example, as has been postulated: cf. A. Bürk, 'Die Theorie der Schlussfolgerung (*anumāna*) nach der Sāmkhya-tattva-kaumudī des Vācaspatimiśra', *Wiener Zeitschrift für die Kunde des Morgenlandes* **15** (1901), p. 251; and Oberhammer, *op. cit.*, p. 72. Despite this peculiarity, however, the *Yuktidīpikā* commentary to the *Sāṃkhyakārikās* was able to preserve much of the *Ṣaṣṭitantra* epistemology, and with sharper discernment than did the *Nyāyabhāṣya*.
[65] 'Erkenntnislehre...', p. 85; 'Candramati...', pp. 75–7.
[66] Candramati, that singular Vaiśeṣika whom Frauwallner dates between 450 and 550 A.D. ('Candramati...', p. 80), mirrors the ascendancy of the *Ṣaṣṭitantra* also. Cf., also, the quotations from Praśastapāda and Candrānanda's mysterious 'Vṛttikāraḥ' ("author of a commentary" to the *Vaiśeṣikasūtras*) in Appendix I, above. In all these authors, an echo of the *Ṣaṣṭitantra* can be heard; Kaṇāda was not the only Vaiśeṣika casting a glance toward the Sāṃkhya.
[67] G. Oberhammer, 'On the Sources in Jayanta Bhaṭṭa and Uddyotakara', *WZKSO* **6** (1962), pp. 98–101, 107.
[68] But less archaic, less naïve, than the *Nyāyasūtras'*.
[69] Tucci, *Pre-Diṅnāga Buddhist Texts...*, translation of *Śataśāstra*, p. 20.
[70] Cf. *VS*.IX.16–7, for example.
[71] *VS*.VII.2.29: *iheti yataḥ kāryakāraṇayoḥ sa samavāyaḥ*: " 'Here (in this place)' – from this (assertion), the notion of cause and effect arises, (and) this is inherence. – See also Candrānanda's commentary which speaks of cloth inherent in threads, color in the pot, etc."
[72] H. Ui, *The Vaiśeṣika Philosophy according to the Daśapadārthaśastra*, Chinese text with Introduction, Translation and Notes, Varanasi 1962[2] (*Chowkhamba Sanskrit Studies* **22**), pp. 94, 138–9.
[73] *Ibid.*, pp. 97, 156: Frauwallner, 'Candramati...', pp. 73–4. See Appendix I.
[74] *VS*.V.1.15, V.2.1–14, VI.1.9–18, VI.2.2–11.
[75] Candrānanda's date is not early, however; for one thing, he mentions Uddyotakara in one passage: on *VS*.III.1.4, p. 29, lines 2–4. In general, Candrānanda follows the *Sūtras* closely.
[76] That is, whether the author of the earlier parts of the *Vaiśeṣikasūtras* knew or cared about the Mādhyamikas or not, I imagine they were working at about the same time.
[77] 'Candramati...', p. 79, n. 30; 'Erkenntnislehre...', pp. 134–5, and n. 51.
[78] One may, of course, question why, then, the 'wind' passage does end just that way, and why the old 'physical space' proof remained unchanged, and I can only suggest that either the soul proof was thought far more worthy of attention than the other two or alternate proofs for them have not survived. Praśastapāda, of course, established that soul exists as the agent which causes the activity of the sense organs which are instruments, but he gives as a secondary proof the old one, that the soul is substrate of its attributes, and lets the fact of self-consciousness support that proof, as Candrānanda does. *Padārthadharmasaṃgraha*, pp. 69–70. But I think that is a further refinement on the information in the *Vaiśeṣikasūtras*.
[79] *VS*.III.2.9: *aham iti śabdavyatirekān nāgamikam*: "(But) the proof (of the soul) is not (just) from (the appeal to) scripture, because of the restricted use of the word 'I'." – But B. Faddegon (*The Vaiśeṣika System*, Amsterdam 1918: Verhandelingen der Koninklijke Akademie van Wetenschappen te Amsterdam, Afd. Letterkunde, N.R. 18, No. 2), p. 258, says that '*nāgamikam*', here, is a later addition, and also *Sūtras* 6–8;

and that therefore inference from the marks by means of self-consciousness is one proof.

[80] I would be the first to admit that this observation is based more on feeling than on evidence, but I sense a critical and even hostile attitude in the later levels of the *Vaiśeṣika-sūtras* towards *Ṣaṣṭitantra* innovations, and I feel that where the Vaiśeṣika text does seem to move close to Vṛṣagaṇa, as here, it is more from accident than willingness. Furthermore, a similar 'process of elimination' is used elsewhere in the Sūtras, for example in the proof for physical space; there is no need to assume borrowing of the technique from the *Ṣaṣṭitantra*, but the technique as employed in the Sūtras is rather raw and unsophisticated.

[81] *VS*.IX.6: *asad iti bhūtapratyakṣābhāvād bhūtasmṛter virodhipratyakṣatvāc ca jñānam*: "(That which is) 'non-existent' (in this time and place) can (nonetheless) be known, from the absense of perception of the existent entity, from recalling that existent entity, and and from the fact of perceiving its contrary."

[82] *VS*.III.2.13: *aham iti pratyagātmani bhāvāt paratrābhāvād arthāntarapratyakṣaḥ*: As for (the word) 'I' – because of the awareness (of the notion) within oneself, because this awareness does not exist elsewhere, there is perception of the 'something quite different' (which is one's own soul)."

[83] 'Erkenntnislehre...', p. 135.

[84] *Ibid.*, p. 134.

[85] Candrānanda on *VS*.III.1.10, p. 26, lines 18–9: *aprasiddho viruddhaḥ, yasya sādhyadharmeṇa saha naivāsti sambandhaḥ, api tu viparyayeṇa, asāv anapadeśo 'hetuḥ*: "That which is not established is (quite) the opposite (case), the connection of which is indeed not with that thing which is to be proven, but rather with something (quite) opposed (to what is to be proven); that invalid mark (therefore) is not the reason (for correct cognition)." – This follows just after the explanation of the four relations themselves, of course. Praśastapāda, *Padārthadharmasaṃgraha*, p. 200.

[86] Ui, *op. cit.*, p. 97; Frauwallner, 'Candramati...,' pp. 73–4, 79.

[87] See Appendix II for other versions of two-fold inference according to Śabarasvāmin and Kauṇḍinya.

[88] Frauwallner, *Geschichte* I, pp. 315, 384–5; Frauwallner, 'Dignāga, sein Werk und seine Entwicklung', *WZKSO* 3 (1959), pp. 93–4; 'Erkenntnislehre...', p. 132.

[89] Frauwallner, 'Dignāga...', p. 93; 'Erkenntnislehre ...', pp. 132–4.

[90] *Padārthadharmasaṃgraha*, p. 69, lines 6–9: the sense organs, which exist, are instruments, like the axe, and require an agent, therefore, which is the soul. (The particular connection 'soul-sense organs' is supersensible.)

[91] Uddyotakara, *Nyāyavārrttika* on *NS*.IV.1.19–21 (from H. Jacobi, *Die Entwicklung der Gottesidee bei den Indern*, Bonn und Leipzig 1923: *Geistesstromungen des Ostens*, 1; Part II, pp. 78 and 117): atoms and *karma* have an intelligent cause, for they act but are themselves without intelligence, like the axe; *īśvara*, the Lord, is the agent. This parallels Praśastapāda's soul-proof exactly, but is even more problematical, since the marks, atoms and *karma*, are themselves invisible. – Vācaspatimiśra, *Nyāyavārttikatātparyaṭīkā*, (Jacobi, *ibid.*, pp. 93 and 124): trees, mountains, etc., have an author who knows their material cause, for they themselves have originated and are unintelligent, like palaces, etc.; *īśvara* is their author, who knows their material cause.